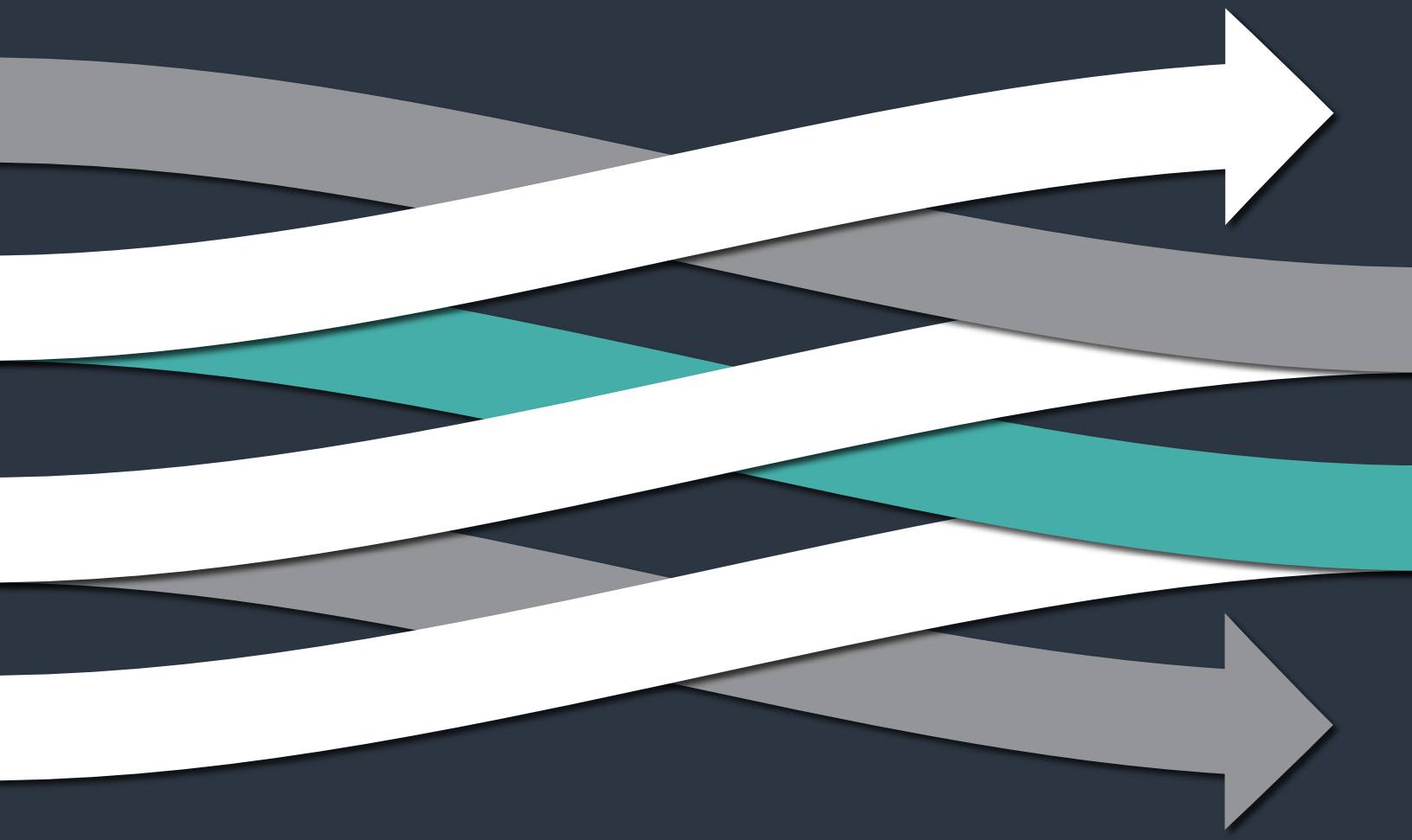
Developmental Education in Arizona:

Past Results, Present Initiatives, and Future Progress

Jeff Thies, Nicola Richmond, Maria Vasilieva and Ozlem Kacira



AMEPAC
Arizona Minority Education Policy Analysis Center

Arizona Commission for Postsecondary Education

EXECUTIVE SUMMARY

In the Arizona Minority Student Progress Report 2018: When the Minority Becomes the Majority (7th edition) it was noted that Arizona's community colleges are a major access point for students entering higher education; over fifty percent of incoming college freshmen are enrolled in a community college[1]. Disproportionately, community colleges are the higher education pathway for at-risk, first generation, and minority students. Achieve60AZ's goal[2], 60% of the Arizona working-age population will hold a postsecondary credential by 2030, can only be reached if both secondary and postsecondary educational institutions, along with workforce, work together as the integral components of a symbiotic system[3], to support college and career readiness, transition and success. Developmental education plays a significant role in this work, and must be viewed, not as a list of courses, but as holistic support to students.

- Findings from the Center for American Progress[4] report that in 2017, approximately 1 in 6 Arizonans overall live in poverty, by race/ethnicity, 33.3% of American Indian or Alaska Natives, 23.5% of Hispanic/Latinos and 22.1% of Black or African Americans.
- From the same study, Arizona is ranked 44th among the states in high school graduation, 42nd for disconnected youth (youths aged 18-24 without high school degrees who were not working or in school in 2015) and 42nd for higher education attainment.
- A Georgetown Public Policy Institute report on job growth and educational requirements suggests that 65% of jobs in 2020 will require postsecondary credentials. In Arizona, the report[5] predicts 68% of jobs requiring higher education credentials for 2020.

Developmental education is a comprehensive process that focuses on the intellectual, social, and emotional growth and development of all students. Developmental education includes, but is not limited to, tutoring, personal/career counseling, academic advisement, and coursework.

The state's economic prosperity is limited by an education system that lacks timely support, early in the system and during critical transition points. Supporting efforts to align K-12, community colleges, universities and industry with a focus on eliminating the achievement gaps is critical to maximizing economic growth for the state and economic security for marginalized members of our communities. Developmental education is a key step in the educational pipeline that links K-12, the community colleges and the universities. Across all genders and race/ethnicities, developmental education student outcomes are lower than for non-developmental students, as discussed in this report.

The challenge is twofold:

- **Recent High School Graduates**: What efforts are being made to lower the likelihood of requiring developmental coursework after graduation?

1 https://highered.az.gov/sites/default/files/AMEPAC%202018%20Report.pdf Arizona Minority Student Progress Report 2018: When the Minority Becomes the Majority, 7th edition

2 http://achieve60az.com/about

3 https://www.pima.edu/about-pima/reports/benchmarking-studies/docs/azcc-strategic-vision-for-2030.pdf

4 https://talkpoverty.org/state-year-report/arizona-2017-report/

5 https://1gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/StateProjections_6.1.15_agc_v2.pdf

- **Adult Population**: How are postsecondary institutions meeting the needs of these students with wrap around support services and alignment of curriculum and employment?

Colleges across the state have been offering and scaling effective alternatives to the outdated remedial education approach. Current best practices that support student success in Arizona include:

-Multiple Measures Placement -Proactive Advising -New Student Orientations - IBEST
-Affinity Group Support (Veterans, LGBTQ) -Community Partnerships (Cradle to Career)
-Dual Enrollment -Co-requisite Courses -Math Pathways - Prior Learning Assessment
-Embedded Support (tutors, coaches, mentors) - Apprenticeships/Internships/Externships

Often these best practices are initiated and analyzed in silos as statewide oversight of the attainment and achievement gap challenges is non-existent. Recommendations to support increasing student completion of a higher education credential are discussed below.

TO SUPPORT ACHIEVE60AZ THE STATE SHOULD:

- Prioritize eliminating the achievement gap.
- Fund the scaling of **IBEST**[6] programs to career and technical programs and ensure sufficient funding is provided for all aspects of developmental education.
- Increase funding to K-12 to boost the number of counselors and staff with a goal of reducing the adult to student ratio and counselor to student ratio, in and out of the classroom. Currently, Arizona's counselor to student ratio is a United States worst of 903 to 1.[7]
- Revise dual enrollment statutes to support early college high schools[8] and ensure sufficient funding is provided for dual enrollment.

TO SUPPORT COLLEGE AND CAREER READINESS, K-12 SHOULD:

- Increase the presence of programs[9] that promote college going culture early in children's educational experience.
- Partner with state community colleges and universities to share data.
- Create, in conjunction with community colleges and universities, transition[10] or college prep courses for seniors with limited college knowledge and preparation.

TO SUPPORT STUDENTS WHO ARE NOT COLLEGE READY, COLLEGES AND UNIVERSITIES SHOULD:

- Invest in initiatives to contextualize developmental learning outcomes.
- Align certificate and degree programs: K-12 - Community College - University - Industry.
- Support dual enrollment efforts with teacher preparation and course offerings.

6 https://ccrc.tc.columbia.edu/media/k2/attachments/how-i-best-works-findings.pdf
7 http://www.azsca.org/files/1516ratios.pdf
8 https://tea.texas.gov/ECHS/
9 https://www.strivetogether.org/our-approach/
10 https://ccrc.tc.columbia.edu/media/k2/attachments/high-school-college-transition-typology.pdf

Arizona Minority Education Policy Analysis Center Recommendations

The national recommendations focus on initiatives largely driven through state systems (California, Florida, North Carolina, Texas) that provide the necessary research, resources, and organizational support, or national organization membership (Achieving the Dream, NADE, Complete College America) that supports specific reform. For Arizona to move the needle on attainment, the state must rally behind initiatives that work to support at-risk students, which includes holistic support for current college students, preparation and education for high school students, systemic changes for students in K-8, and strong partnerships in a comprehensive P-20 system that shares data to effectively support our state's investment in the future. Below are the Arizona Minority Education Policy Analysis Center's recommendations for addressing developmental education in Arizona.

- Continuously assess the effectiveness of multiple measure placement processes, just in time academic support (e.g. co-requisite support), and non-cognitive support in a continuous improvement cycle.
- Increase the presence and fund programs that promote college-going culture early in students' educational experience, such as dual enrollment and early college programs.
- Invest and fund career and technical initiatives that contextualize and integrate developmental learning outcomes, such as the Integrated Basic Education Skills Training (IBEST)[11] instructional model.
- Create partnerships among Arizona K-12 institutions, community colleges, and universities to better utilize and seamlessly exchange data, such as Cradle to Career Partnership[12] in Tucson. This partnership follows four elements to the collective impact framework: shared community vision, evidence-based decision making, collaborative action, and investment and sustainability.
- Continue developing a state-wide longitudinal data system linking K-12 to higher education and that includes developmental education data.
- Increase funding to boost the number of counselors (K-12 and higher education) with a goal of reducing the counselor to student ratio.
- Create, in conjunction with community colleges and universities, transition or college prep courses for at-risk/underserved student populations.
- Share student information such as the Education and Career Action Plan (ECAP) and transcript information with colleges and universities to support holistic assessment and multiple measures.

11 https://ccrc.tc.columbia.edu/media/k2/attachments/how-i-best-works-findings.pdf

12 https://www.c2cpima.org/

- Provide holistic support to students, including non-cognitive and basic needs, to remove barriers to their academic success. This could include basic need assistance with food, housing, transportation, and childcare. Examples of non-cognitive assistance could include topics such as mindset, time-management, self-efficacy, and mindfulness.
- Strategically connect and collaborate with the Arizona Association for Developmental Education and the National Organization for Student Success.
- Establish a method of state-wide collaboration among higher education leaders engaged in developmental education efforts.
- Expand assigning college liaisons to increase communication and collaboration with K-12 districts.

Concluding Remarks

To eliminate the achievement gap and meet the goals of Achieve60AZ, Arizona needs to; reconsider how funds are allocated to focus resources on supporting best practices based on statewide evidence, support cross-functional community teams working to provide equity in education, and coordinate efforts aimed at college and career readiness. If the state is to move the needle on postsecondary credentials by 2030, college and career readiness needs to be at the forefront of the effort. High schools play a significant role in preparing students, and efforts are being made to increase the number of graduates that enter college prepared for success. Developmental education plays a role for those that aren't ready to succeed. Recent high school graduates or new traditional students may not be prepared for the rigors of a college program and require support to succeed. The role of developmental education has and continues to change, but the challenge remains the same, students will enter unprepared and will require holistic support. Knowing this, it is imperative that colleges are funded to meet the challenges the unprepared student will face, faculty and staff are supported in the creation and scaling of successful programs, and efforts exist across educational systems focused on student success with an equity-mindedness lens.

AMEPAC MEMBERS

Anabel Aportela, Ph.D.
Arizona School Boards Association
Arizona Association of School Business Officials

Susan Carlson
Carlson & Affiliates

Panfilo H. Contreras
Private Education Consultant

Dr. Mark Denke
Arizona Board of Regents

Dr. Alfredo G. de los Santos Jr.
Arizona State University

Dr. Dolores Durán-Cerda
Pima Community College

Dr. Stanlie M. James
Arizona State University

Dr. James P. Lee
Paradise Valley Unified School District

Jacob Moore
Arizona State University

Dr. Ray Ostos
Maricopa County Community College District

Dr. Rebecca Tsosie
University of Arizona

Magdalena Verdugo
Chicanos Por La Causa, Inc.

Susanna Zambrano
Arizona Western College

About AMEPAC

The Arizona Minority Education Policy Analysis Center (AMEPAC) is a sub-committee of the Arizona Commission for Postsecondary Education. Its mission is to stimulate through studies, statewide discussion and debate, constructive improvement of academic outcomes for minority students throughout all sectors of education by monitoring and reporting on student academic progress and commissioning research to improve it.

AMEPAC is funded by support from institutes of higher education and philanthropy and staffed by the Arizona Commission for Postsecondary Education and is guided by a council of members that represent the state's universities, community colleges, K-12 system, research and community organizations, as well as business and the private sector.

To see more information and the publications commissioned by AMEPAC, including the developmental education report executive summary and full narrative, go to **www.highered.az.gov** and click on AMEPAC.

CONTENTS

Over 50% of incoming freshmen are enrolled in community colleges.

INTRODUCTION

In the Arizona Minority Student Progress Report 2018: When the Minority Becomes the Majority (7th edition) it was noted that Arizona's community colleges are a major access point for students entering higher education; over fifty percent of incoming college freshmen are enrolled in a community college[13]. Disproportionately, community colleges are the higher education pathway for at-risk, first generation, and minority students. Achieve60AZ's goal[14], 60% of the Arizona working-age population will hold a postsecondary credential by 2030, can only be reached if both secondary and postsecondary educational institutions, along with workforce, work together as the integral components of a symbiotic system[15], to support college and career readiness, transition and success. Developmental education plays a significant role in this work, and must be viewed, not as a list of courses, but as holistic support to students.

THE GOAL

60%

of the Arizona working-age population will hold a postsecondary credential by 2030.

The challenges of developmental education are a national topic, with successful completion of a credit-bearing course as a common goal; many students struggle to complete lengthy sequences on route to gateway courses. The potential solutions vary in scale and scope, depending on the organization behind the effort, and have expanded over the last decade and a half. There are three major challenges in Arizona; too many recent high school graduates are placed into developmental level courses, not enough students progress through the developmental courses into gateway program courses, and curriculum, from high school through the first year of college or into the workforce, is disjointed. The statewide Strategic Vision Outcomes Report[16] from 2017 lists success rates after developmental math and English/reading as 31% and 48% respectively. Combining this with the knowledge that more students place into developmental levels than do not, and a sense of the barrier developmental placement

13 https://highered.az.gov/sites/default/files/AMEPAC%202018%20Report.pdf Arizona Minority Student Progress Report 2018: When the Minority Becomes the Majority, 7th edition

14 http://achieve60az.com/about

15 https://www.pima.edu/about-pima/reports/benchmarking-studies/docs/azcc-strategic-vision-for-2030.pdf

16 http://arizonacommunitycolleges.org/#StrategicVisionRow

poses becomes apparent. The 2016 Arizona Minority Student Progress Report highlighted challenges to obtaining statewide data including varied threshold testing, a lack of common definitions, and no central coordinating entity. Major challenges to alignment include the lack of a centralized effort, dedicated resources, coordination between state entities in charge of education, and clear pathways. Without a statewide coordinating board, each sector of education in the state operates in a silo, focused on disparate mission statements. High school districts' priority is to graduate students, and they are now incentivized to report students as college and career ready through various metrics. Community colleges work with a broader mission, but have recently added success to the historic access mission. However, the primary 4-year student success metric (graduation) does not capture community college student intent and thus, community colleges struggle with accountability metrics in this area. The state universities focus on a variety of institutional success measures outside of college readiness and first year success, most notably research and intercollegiate athletics, as admissions criteria are seen as minimum standards that eliminate the need for most developmental coursework.

Who is responsible for ensuring the pipeline is aligned, providing clear pathways for students from high school to credential? Efforts exist regionally with dual enrollment, career and technical partnerships, and transfer agreements, however many of these support students that are well prepared to make a commitment to higher education. Operating in silos, without common definitions, standardized curriculum alignment, and financial support, the state's at-risk and underserved student populations will continue to struggle, making the 2030 goal difficult to reach.

WHAT IS DEVELOPMENTAL EDUCATION?

Developmental education, referenced synonymously, in error, as remedial education, encompasses a wide variety of activities designed to support student's educational success in colleges and universities. This report focuses on a review of initiatives supporting developmental education student success in Arizona. A description of developmental education in Arizona, including data from state reports and the community college's strategic vision, describes the problem as it relates to local communities. Acknowledging the challenges, the report discusses best practices implemented at community colleges in the state. The report concludes with policy recommendations.

Before moving on, it is important to provide a definition of developmental education. Hunter Boylan has championed the ideals that define today's developmental education. The National Association of Developmental Education (NADE) definition of developmental education goes far beyond what historically was referred to as remedial education. The association's definition[17]:

> **Developmental education** is a comprehensive process that focuses on the intellectual, social, and emotional growth and development of all students. **Developmental education** includes, but is not limited to, tutoring, personal/career counseling, academic advisement, and coursework.

Whereas remedial education focuses on the re-teaching of cognitive skills not mastered in high school, or perhaps forgotten after time away, developmental education approaches students from a holistic perspective, incorporating cognitive and affective support.

developmental education approaches students from a holistic perspective

17 https://thenade.org/Mission-Vision-and-Goals

Developmental education is a key step in the educational pipeline that links K-12, the community colleges and the universities.

WHY IS AMEPAC EXAMINING DEVELOPMENTAL EDUCATION?

The Arizona Minority Education Policy Analysis Center (AMEPAC) was created in 1996 under the auspices of the Arizona Commission for Postsecondary Education. Its mission is to stimulate, through studies, statewide discussion, and debate, constructive improvement of Arizona minority students' early awareness, access, achievement, and graduation throughout all sectors of education.

This report seeks to describe the students who need developmental education in Arizona, review current promising practices and present guidance and policy recommendations in regards to developmental education, with a focus on minority student success. AMEPAC recognizes that a large proportion of students in Arizona require some developmental education, understands K-12 plays a significant role in minimizing the need for developmental education courses, and is aware that outcomes are different across minority groups as well as across the broad populations of students requiring developmental education and those who do not. The variation

within minority groups is particularly concerning in light of projected changes in the demographics of Arizona residents[18], which indicate a significant increase in the number of Hispanic residents through to 2050. This highlights the need to ensure minority students are successful in developmental education, to support both their success and that of the state. It also presents a compelling case that educational offerings must be culturally aware and engaging for the diverse population within Arizona.

A wide range of educational entities are working to support students who need developmental education. This includes, but is not limited to, high schools, community colleges, universities and private/vocational schools. In some cases, across these entities there are statewide groups addressing developmental education or data systems that enable student tracking across the state. However, not all entities participate in those systems and, as a result, private/vocational schools and industry/apprenticeships efforts - while important - are difficult to view at the statewide level and are not included in this report.

Within Arizona, the lack of equity in educational outcomes is concerning. Findings from the Center for American Progress[19] report that in 2017, approximately 1 in 6 Arizonans overall live in poverty and by race/ethnicity, 33.3% of American Indian or Alaska Natives, 23.5% of Hispanic/Latinos and 22.1% of Black or African Americans live in poverty. From the same study, Arizona is ranked 44th among the states in high school graduation, 36th for unemployment, 42nd for disconnected youth (youths aged 18-24 without high school degrees who were not working or in school in 2015) and 42nd for higher education attainment. Without significant change to the state's educational gaps, future economic growth for individuals, communities and the state are in jeopardy.

242,805 students taking classes in the **ARIZONA COMMUNITY COLLEGES**

OVER **40%** attempted at least one developmental education class at some point

A Georgetown Public Policy Institute report[20] on job growth and educational requirements suggests that 65% of jobs in 2020 will require postsecondary credentials. In Arizona, the report predicts 68% of jobs requiring higher education credentials for 2020. To meet the needs of future jobs and to provide a more inviting environment to attract companies to Arizona, postsecondary achievement needs to improve. Based on an economic value model from Lumina Foundation Strategy

18 https://population.az.gov/population-projections

19 https://talkpoverty.org/state-year-report/arizona-2017-report/

20 https://1gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/StateProjections_6.1.15_agc_v2.pdf

Labs, if Arizona increased its adult college attainment (degrees and certificates) rate to 60% by 2025, state and federal revenues would increase by 645 million. Two critical actions need to occur to support the increase in adult attainment:

- Improve K-12 student achievement by engaging students early in college and career exploration and by offering contextualized programming.
- Community colleges and universities create and implement programs targeting returning students, understanding the needs of this population.

The non-profit organization, Center for the Future of Arizona, is supporting important work in this area through the Arizona Pathway to Prosperity[21], bringing K-12, colleges and industry together. This work needs to be scaled for Arizona to realize goals currently hindered by achievement gaps. The state's economic prosperity is limited by an education system that lacks timely support, early in the system and during critical transition points. Supporting efforts to align K-12, community colleges, universities and industry with a focus on eliminating achievement gaps is critical to maximizing economic growth for the state and economic security for marginalized members of our communities.

Developmental education is a key step in the educational pipeline that links K-12, the community colleges and the universities. Educational institutions in Arizona need to ensure students leave high school ready for the workforce or higher education and, equally, to ensure the community colleges have offerings that take students from where they are to where they want to go, with full access and educational pathways that support success. Improving educational outcomes is directly associated with improved job opportunities, higher lifetime earnings and contributes to improving the economic status of the region.

21 https://www.arizonafuture.org/couch/uploads/file/AZPTP_Overview2018_(120718).pdf

WHO ARE ARIZONA'S DEVELOPMENTAL EDUCATION STUDENTS?

Within Arizona, for 2015-2016, of the total 242,805 students taking classes in the Arizona community colleges, 100,024 of them (over 40%) attempted at least one developmental education class at some point. There have been over 40,000 students enrolled in developmental education courses ***in each year*** since 2011-2012. The number has dropped in recent years (48,784 in 2011-2012 to 40,194 in 2015-2016), consistent with a national trend in community college enrollment that has seen decreases between 2.4% and 4.4% a year[22].

The characteristics of developmental education students are summarized in the *Demographics infographic on page 13*. Data indicate that the age distribution of developmental education students is generally consistent with the full community college population. Students from many minority race/ethnicity groups are overrepresented in developmental education, including Hispanic/Latino, American Indian/Alaska Native and Black or African American students. Gender distribution between developmental courses and college-level courses is fairly balanced. Approximately 60% of students enrolled in developmental courses receive some financial aid, with 40% of that population receiving a Pell grant, that is money provided

22 https://www.aacc.nche.edu/wp-content/uploads/2017/11/TrendsCCEnrollment_Final2016.pdf

by the government for qualifying students that does not have to be repaid. Full results are provided in Appendix A.

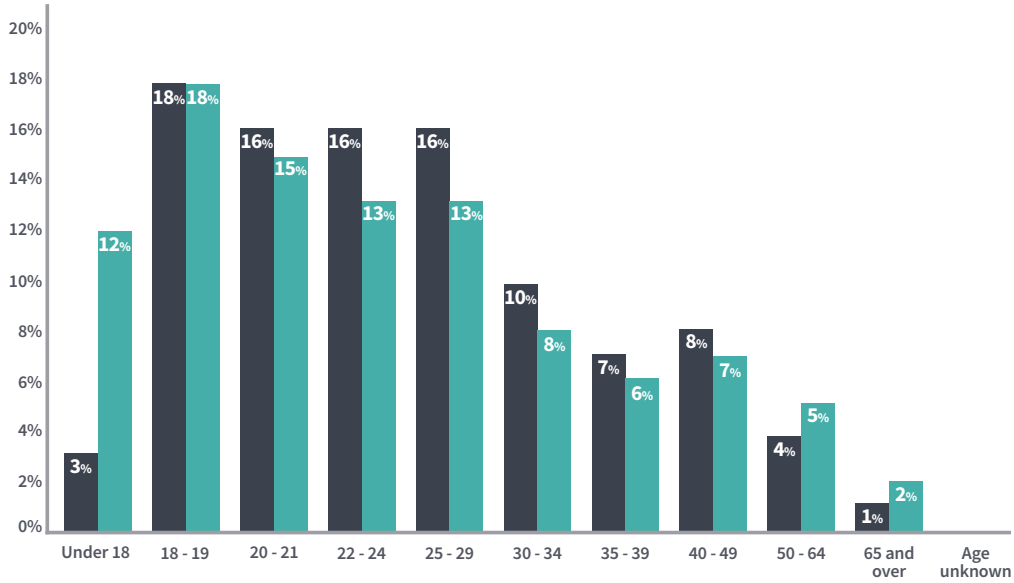
National data are consistent with the trends seen in Arizona, with Hispanic and Black or African American students more likely to be in developmental education[23]. The national data also indicate that low income students are also disproportionately likely to be in developmental courses. While statewide data on student income is not available, data on enrollment based on a student's zipcode - which can be considered as a proxy for socioeconomic status - has been analyzed using institutional data available through one metro community college in Arizona. Results indicate that the two zip codes with the highest proportion of students enrolled in developmental education courses both have median incomes substantially below the median for the county, which indicates that the national trend of more low income students in developmental education may be the case for Arizona as well.

23 Chen, X. (2016). Remedial Coursetaking at U.S. Public 2- and 4-Year Institutions: Scope, Experiences, and Outcomes (NCES 2016-405). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved December 2018 from http://nces.ed.gov/pubsearch.

DEMOGRAPHICS

DEMOGRAPHICS - AGE

2015 -2016



ALL STUDENTS

242,805

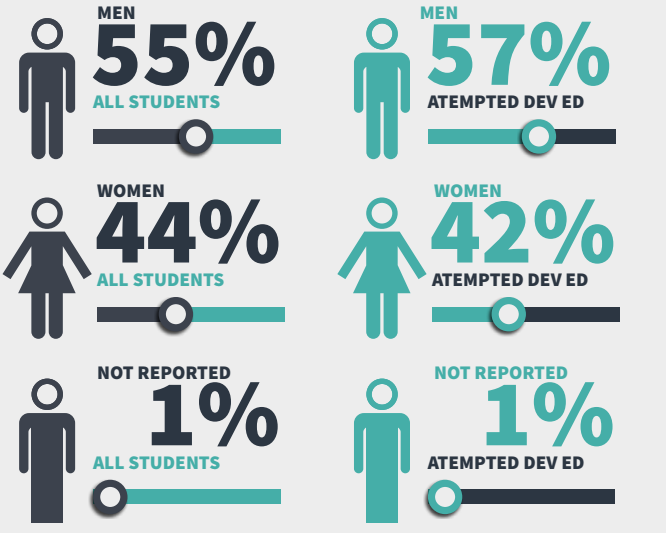
ATTEMPTED DEVELOPMENT EDUCATION

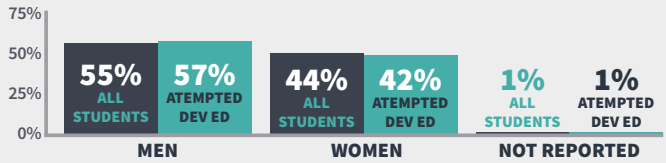
100,024

41%

DEMOGRAPHICS - GENDER

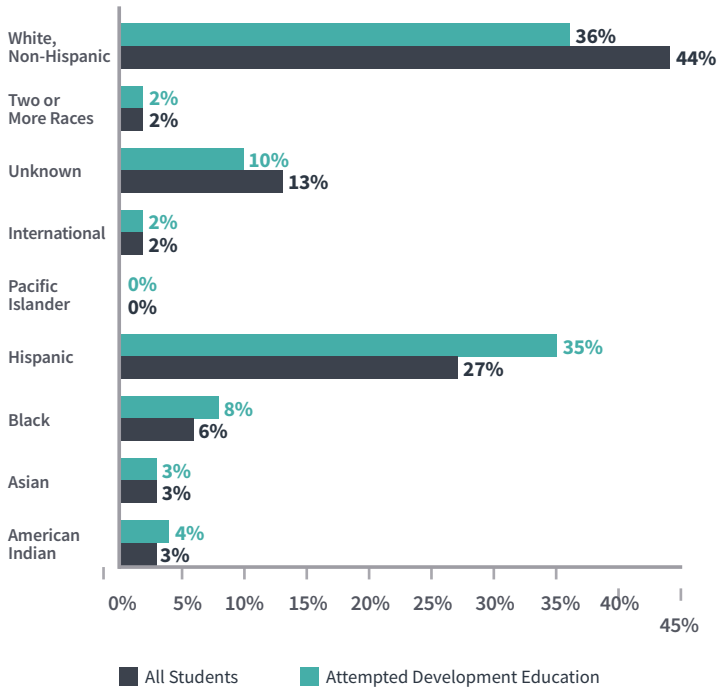
2015 -2016

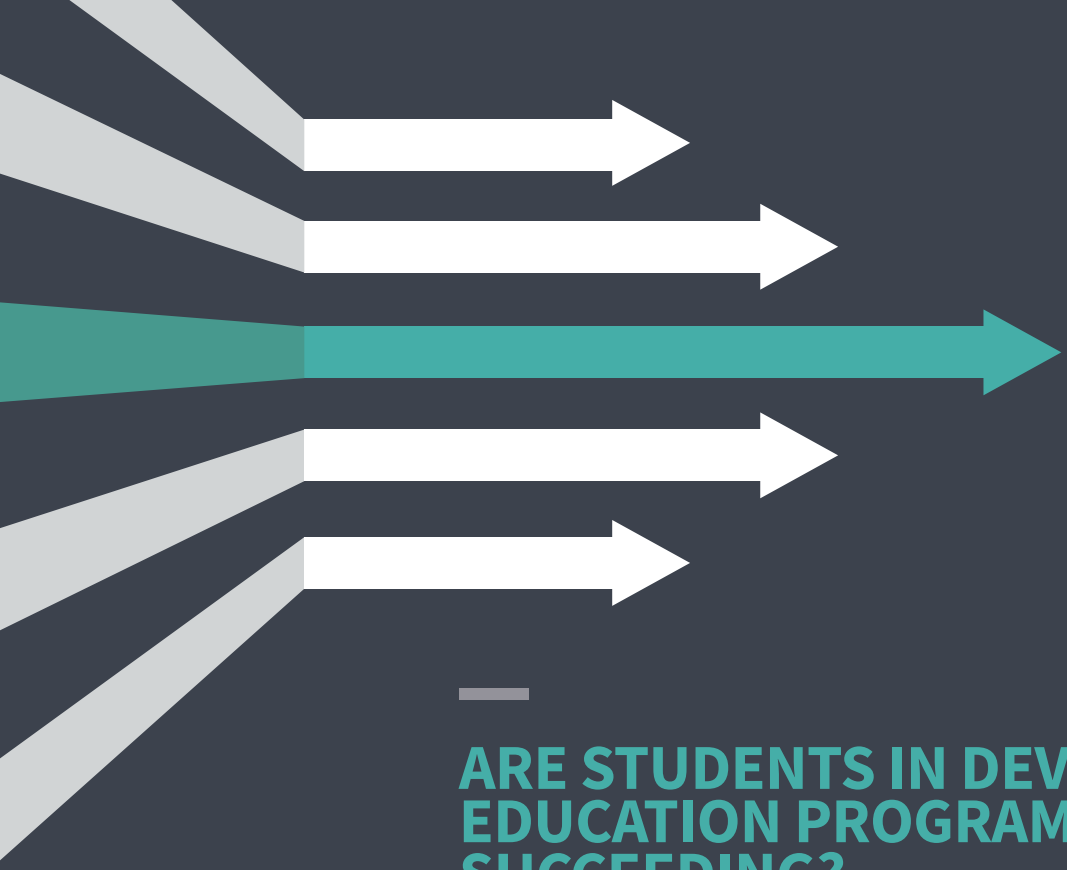




DEMOGRAPHICS - ETHNICITY

2015 -2016





ARE STUDENTS IN DEVELOPMENTAL EDUCATION PROGRAMS AND COURSES SUCCEEDING?

Student success can be considered through a number of lenses, including access to education, progress toward the student's desired outcome and award completion. Progress and completion measures are summarized in the *Outcomes infographic on page 15*.

Developmental education is arguably a success in terms of access, as it is intended to take students from their starting math and writing level and prepare them for college-level classes. In terms of progress, however, developmental students have a lower grade point average (GPA) than college-level students[24] and course success rates in development classes are lower than college-level rates[25]. Regarding longer-term outcomes, through a custom analysis by the Arizona State System for Information on Student Transfers[26], a fall 2010 starting cohort of students was tracked for four- and seven-years to determine the certificate, Associate Degree and Bachelor Degree achievement rate for developmental education and non-developmental education populations. This was disaggregated by gender, race/ethnicity and other demographics. Across all genders and race/ethnicities, developmental education student outcomes were lower than for non-developmental students. There are variations between male and female students, with male students earning more certificates and females earning more degrees. Hispanic/Latino students have less successful outcomes than White students. However, the differences by gender or race/ethnicity are minor compared with the difference in outcomes between developmental education students and those not in developmental education. Full results are provided in Appendix A.

Across the full student body at community colleges

27% of students **identify as hispanic.**

Within developmental education courses, this rises to 35%

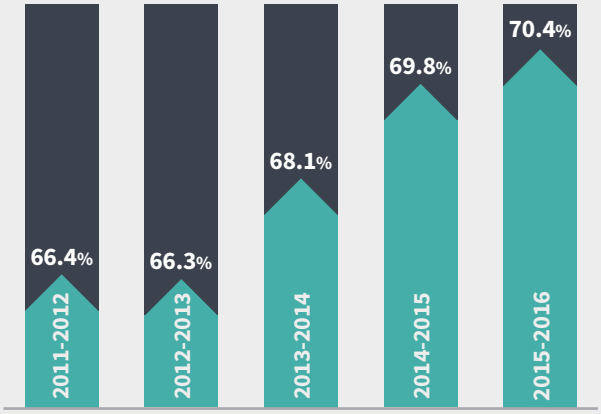
24 Arizona Community College Presidents' Council report on academic performance of high school graduates (A.R.S. [section] 15-1822) Retrieved December 2018, http://azmemory.azlibrary.gov/digital/collection/statepubs/id/32323

25 Arizona Community Colleges Coordinating Council Strategic Outcomes.

26 https://www.manula.com/manuals/aztransfer/assist-users-manual/1/en/topic/home

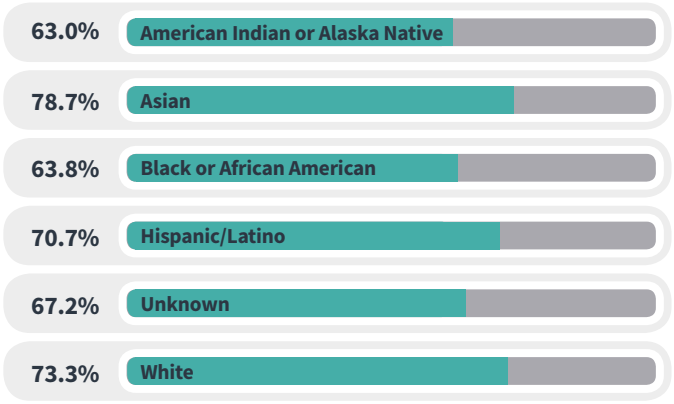
OUTCOMES

COURSE SUCCESS RATES
FOR STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATION COURSES



Of the students who attempted a developmental education course in a given year, this chart presents their overall course completion rate (defined as receiving a passing grade).

COURSE SUCCESS RATES IN ALL CLASSES
FOR STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATION BY RACE/ETHNICITY



Of the students who attempted a developmental education course in 2015-2016, this chart presents their overall course completion rate (defined as receiving a passing grade).

AVERAGE SUCCESS RATES
FOR ALL COMMUNITY COLLEGE STUDENTS IN 2015-2016 BY CLASS TYPE

COLLEGE-LEVEL CLASSES 79.6%

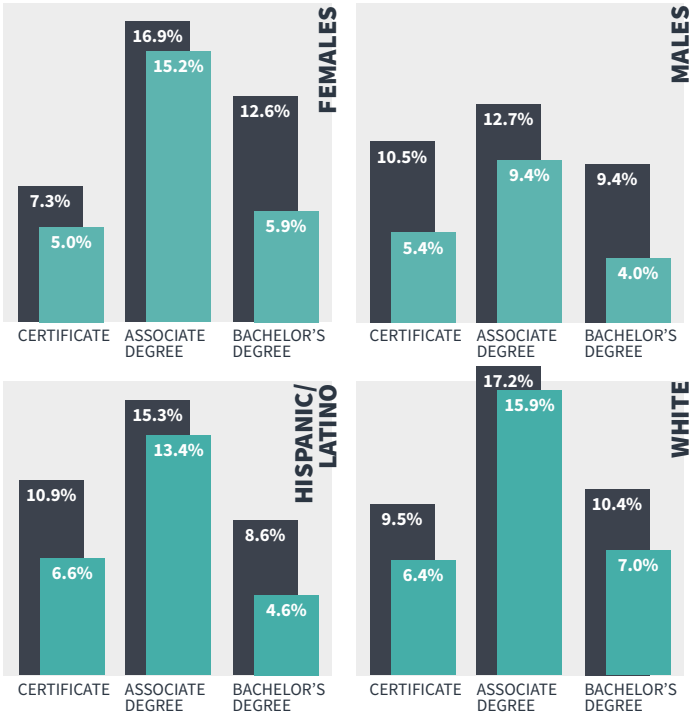
DEVELOPMENTAL MATH 62.6%

DEVELOPMENTAL READING/WRITING 77.0%

From the Arizona Community College's 2017 Strategic Vision

OUTCOMES FOR FALL 2010
SEVEN YEAR OUTCOMES

Students Who Attempted Developmental Education Courses | Not Development Education



OUTCOMES ARE HIGHER FOR STUDENTS NOT IN DEVELOPMENT EDUCATION

AVERAGE COLLEGE FRESHMAN GPA

OF RECENT HIGH SCHOOL GRADUATES AS A FUNCTION OF THEIR LEVEL IN THEIR FIRST COLLEGE FALL ENGLISH OR MATHEMATICS CLASS

ENGLISH
- 2.50 DEVELOPMENTAL ENGLISH
- 2.78 FRESHMAN ENGLISH

ALGEBRA
- 2.10 DEVELOPMENTAL PRE-INTERMEDIATE ALGEBRA
- 2.31 DEVELOPMENTAL INTERMEDIATE ALGEBRA
- 2.47 FRESHMAN COLLEGE ALGEBRA

WHAT DOES THIS MEAN FOR ARIZONA?

These findings indicate that a large proportion of students enrolled in the state community colleges require developmental education classes. This developmental population is over-represented in terms of minority students. Outcomes are less favorable for the students in developmental education, with lower course success rates, lower GPA and lower long-term outcomes. These findings are not unique to Arizona and, nationally, there are no easy answers to how outcomes can be improved for students needing developmental coursework[27]. However, to provide all Arizona residents with pathways to education that will support their success and further develop a skilled workforce within Arizona, solving the developmental education challenge is of central importance.

27 Center for Community College Student Engagement. (2016). Expectations meet reality: The underprepared student and community colleges. Austin, TX: The University of Texas at Austin, Educational Administration, Program in Higher Education Leadership. Retrieved December 2018, http://www.ccsse.org/docs/Underprepared_Student.pdf

BARRIERS TO SUCCESS ALONG THE EDUCATION PIPELINE

Transitioning from high school to college presents multiple challenges for any student. A student transitioning twice (K-12 to CC and CC to 4-year) often doubles, at a minimum, the effort required to overcome the obstacles. For students in households with limited to no postsecondary experience, the challenges can become barriers. When was college attendance first discussed in the student's life? Was the conversation about goal setting or lowering the bar? Who in the student's life has postsecondary experience to draw from? What services does the student's primary and secondary schools provide? Without college knowledge, how does a student navigate the bureaucracy of postsecondary? How does a student prepare themselves for the tests, applications and essays? What steps does the student take to investigate career options? How does a student determine the financial implications, both short-term and long term, of attending college? How does the student determine what degree or a certificate is appropriate? Getting a late start with the postsecondary discussion creates difficulties that can derail the entry and early success in college.

Barriers to success in education have been researched extensively with longitudinal tracking. The National Center for Education Statistics' (NCES) *National Longitudinal Study of the High School Class of 1972* (NLS-72) followed over 20,000 high school students. Later iterations of longitudinal studies occurred with cohorts from 1980, 1988, 2002 and 2009. Across the studies data on family support, socio-economic status (SES), racial and ethnic background, gender, and other college going factors were collected. A summary report produced by the NCES in 1996 described the challenges faced by women, ethnic and racial minorities, and lower SES students from the 8th grade class of 1988. Eighth grade students, in this cohort, who were in the highest achievement quartile had the fewest challenges to overcome and are significantly more college goal oriented. Disaggregating the highest quartile by SES provided the only equality concerns and was focused on at-risk factors and attendance patterns. The High School Longitudinal Study 2009 (HSLS:09) is active, tracking high school freshmen from the 2009-10 academic year. The National Association of College Admissions Counseling (NACAC) utilized data from the HSLS 2009 report to explore how high school counseling played a role. The research included a view into the percent of time committed to college counseling by school type. Schools with counselors spending more than 20% of their time on college preparation activities were private (70% vs 44% for public) and served a population of free or reduced students that was under 20% (60% vs. 35% free and reduced 40 - 59%). As the research discussed here indicates, the challenge of attending college is not a one-size fits all discussion. Noting that, the following obstacles outline what the general student faces entering a community college and the university.

The lack of a required plan of coursework and the numerous choices a community college provides can be viewed as a liberal arts, find your passion, right to fail, college experience. Although this works well for some, particularly those that can afford to investigate their interests over time, this option is not a viable option for many community college students. Financial concerns, job requirements, and time to completion are stronger factors in the decision process.

Challenges New Community College Students Face

- Unclear process steps: apply, placement test, career exploration, enrollment, advising
- Financial plans: FAFSA, scholarships, grants, loans, payment plans, tuition, textbooks, course fees
- Schedule: multiple locations, abbreviations, gaps, prerequisites/requisites, course sequencing
- Environmental differences: student diversity, student responsibility, study expectations outside of class, assessment of knowledge acquisition
- Development Coursework: potentially multiple courses in multiple disciplines

Guided Pathways is a recent movement across the nation in community colleges focused on eliminating many of these challenges through a structured and required program of study. The American Association of Community Colleges has collaborated with several national organizations to support 30 institutions implementation of the pathway model[28]. The **AACC guided pathway model**[29] is less an initiative and more a cultural change, spearheaded by faculty leveraging evidence to identify and support areas to change. Locally, Pima Community College and the Maricopa Community Colleges have supported the creation of a statewide **Complete College America**[30] (CCA) consortium[31]. The pillars of CCA's Guided Pathway plan are providing a strong start (15 to Finish, Math Pathways, Corequisite Support and Momentum Year), maintaining momentum with academic maps and proactive advising, and redesigning systems to attract returning adults (accelerated courses, prior learning assessment). Although the prescriptive CCA model shows promise, the model only supports incoming students with little to no developmental needs, as the default pathway on-ramps, other than co-requisite, are not defined, or assumed not to be needed. Cochise College, Pima Community College and the Maricopa Community Colleges plan to implement pathways within the next few years, with Pima CC holding tightly to the CCA model and MCCCD blending best fit ideals from AACC and CCA models and support from the National Center for Inquiry and Improvement.

Obstacles Transfer Students Encounter

- Transfer of coursework: total credits, course by course equivalency, course offerings and degree program acceptance
- Transferring institutions: application and financial aid changes, costs, learning new procedures (enrollment, program specifics), parking, basic needs, and new student support people and places
- Sense of belonging: new social groups, clubs, activities, study groups, and interactions with professors

Many state systems have streamlined the transfer process for public community colleges and universities, lowering the course credit issues. Transfer pathways, articulation agreements, and co-enrolled partnerships provide opportunities for transfer students to overcome many of the course related obstacles. In Arizona, the AZTransfer website[32] provides tips, support and resources for students transferring from state community colleges to the three public universities. The course equivalency guide provides course to course transfer options. Paired with the forthcoming guided pathways and ASU's transfer maps[33], these partnerships limit extra coursework. Universities often support transfer students once they arrive with transfer specific services, including residential life facilities. The UA's Bridge[34] program partners with

28 https://www.aacc.nche.edu/programs/aacc-pathways-project/
29 https://www.aacc.nche.edu/programs/aacc-pathways-project/
30 https://completecollege.org/
31 https://completecollege.org/arizona/
32 http://www.aztransfer.com/
33 https://www.transfer.asu.edu/
34 https://admissions.arizona.edu/how-to-apply/transfer/ua-bridge

statewide community colleges to not only provide pre-transfer admissions and counseling services , but also adds scholarship dollars to support the transfer transition. NAU provides a different option to support transfer and completion by offering many programs through statewide extension sites and 2NAU[35]. This program provides students concurrent enrollment, the ability to complete a degree without moving, and supports the student throughout with dual advising. Although transfer challenges have been a widely researched topic, partnerships, articulation agreements and reverse transfer are in place, minimizing the adverse effects transferring has historically had on student success. This same passion for transfer challenges needs to be brought to developmental education in the state.

35 http://ec.nau.edu/why2nau.aspx

SOLUTIONS AND BEST PRACTICES IN ARIZONA ACROSS ALL LEVELS OF EDUCATION

The turn of the century brought about significant change in higher education. Technology is one facet providing the most rapid and far-reaching change. Online courses, student management systems, recruitment, financial aid, enrollment, internal and external communication, are just a few of the sectors of the student experience that have been significantly changed in the last 15 - 20 years. Technology has also allowed data to be more accessible, leading to an increase in analysis, and a broader use of evidence for decision-making. Simultaneously, higher education has experienced an increase in external agencies revising policies that trickle down to day-to-day college operations. External agencies' ability to increase the focus on accountability has also been affected by technology. More advanced sets of data, new metrics to define evidence, and the speed by which the data can be retrieved and analyzed, are all possible due to rapid changes in technology. Student learning outcomes assessment, learning analytics, data consortiums (Voluntary Framework of Accountability, National Student Clearinghouse), and data coaches (Achieving the Dream) have all led to an

increased focus on accountability. For community colleges that focus has expanded the spotlight to include success. Historically community college's primary role was to provide access to all, regardless of one's educational background, by providing no to low cost higher education. Access with limited success, however, has become the focus of many critiques of current operations.

The American Association of Community College's (AACC) published a report titled *Reclaiming the American Dream: Community College's and the Nation's Future* in 2012. The first redesign recommendation[36] in the report is to increase completion rates by 50% by 2020. Non-profit organizations, some with significant financial support, are operating with this goal in mind (Complete College America, Jobs for the Future, Completion by Design). As these organizations have expanded the research with the completion agenda, remediation has become a topic of extreme interest, some calling for its elimination[37]. Other national organizations (AMATYC, CRLA, TYCA, NCDE, AtD, NADE, see Appendix B) and state systems (Texas, North Carolina, California, Washington) have explored and implemented interventions and initiatives that support student success through redesign efforts focused on all students. The redesign and reform movements in developmental education are not new, they are however discussed in greater circles as a result of the critiques and research.

In a state without a statewide system, the efforts of others is not widely communicated. Whereas in states like California, Virginia, Texas, or Washington, statewide teams exist to investigate, research, and inform practice. In Arizona, colleges fend for themselves, occasionally working professional networks (AADE, ArizMATYC) to discuss scenarios, new initiatives and interventions, and/or adoption of national initiatives. To gather feedback from Arizona community colleges, the authors created and disseminated a survey to academic leaders at 20 colleges across the state. Thirteen colleges responded. The survey contained questions in line with the developmental education subtopics: placement, advising/counseling, courses, and support. The data collected, along with national and state initiatives, inform potential efforts of colleges to increase student success for students enrolled in developmental courses and programs.

Placement

Placement into coursework is one of the first face-to-face communications many students will have in the on-boarding process. The process focuses primarily on four disciplines: English as a second language, mathematics, reading, and writing. Placement tests often provide a new testing experience for many students. The Accuplacer test, for example, is computer adaptive, adjusting the rigor of questions based on previous right or wrong answers. Historically the majority of community colleges utilized either Compass or Accuplacer (possibly both) as the only tool to gain information used for placing the student into courses. This practice was widespread,

36 AACC's *Reclaiming the American Dream: Community College's and the Nation's Future*

37 Complete College America's, *Remediation Higher Education's Bridge to Nowhere*, April 2012

even with acknowledgement from both tests that the measures retrieved from the test should be used in conjunction with other information. The **Community College Research Center**[38] has provided multiple reports on the placement process at community colleges. Early efforts from the research center focused on how well placement exams predicted success[39]. The costs of placement testing[40] and potential ramifications of misplacing, specifically the costs of under-placing students into courses below college level followed. This led to work on the accuracy of placement models that focused on a single placement test and the potential use of high school transcript data[41]. Around this time, other state systems were working on incorporating a multiple measures approach to placement, with some states eliminating the need to test by utilizing metrics students could provide (high school transcript data and/or national or state test data). A 2014 report[42], conducted by WestEd, reviews various models of multiple measure placement systems, as part of a broader look into common core implementation and college readiness. The systems in the evaluation contain models that reference high school transcripts, national tests, and a combination of the two. The state of California has spent considerable efforts to align high school transcript data[43] as part of a common placement process for community college coursework. The research supported the approval of **Assembly Bill 705**[44] in California in 2017, mandating colleges utilize high school data in the placement process for English and mathematics coursework..

The recent research discusses the benefits of taking a multiple measures approach to placement, what measures could be included, and possible structures for how the measures interact to provide an effective placement. However, one limitation is that the concept of multiple measures often eliminates a substantial portion of new students to community colleges, returning adults, due to time limits on metric dates. Two programs that do support returning adult learners in this area are the GED test and Prior Learning Assessment. The GED Testing Service has completed research on its new test (2014) and provides an opportunity for colleges to allow students to bypass placement testing with a new college ready score range (2016, GEDTS). **Prior Learning Assessment**[45] (PLA) programs provide a great option for students entering or returning to college after multiple years removed from high school graduation. PLA programs focus on students earning college credits for learning acquired outside of academe, typically by testing, review of non-academic certificates or licenses, or portfolio assessment. Moving from a sterile placement process, which includes a single, often unprepared, cognitive measure determination, to a whole student process fits developmental education.

Placement into or out of basic skills courses in mathematics, reading, and writing is one of the first steps to community college enrollment. In Arizona, five community college districts are actively incorporating and researching the use of multiple measures to support effective

38 https://ccrc.tc.columbia.edu/Developmental-Education-and-Adult-Basic-Skills.html, accessed February 2019

39 (2012, Clayton).

40 (2014, Rodriguez, Bowden, Belfield, Clayton)

41 (2015, Clayton, Belfield).

42 https://www.wested.org/wp-content/uploads/2016/11/1397164696product55812B-3.pdf

43 (2016, MMAP Research Team).

44 https://assessment.cccco.edu/ab-705-implementation/, accessed February 2019

45 https://www.ecs.org/50-state-comparison-prior-learning-assessment-policies/, accessed February 2019

placement of students. Measures used by these districts include unweighted high school grade point averages, grades in specific high school courses, and test scores from SAT, ACT and GED. Recently the Maricopa Community Colleges installed a multiple measures **placement process**[46] that mirrors California's new system mentioned earlier. One common challenge with multiple measures is collecting the data required for the multiple measures process. Requiring students to provide high school transcript data adds a layer of activity that complicates the process. Data sharing agreements between community colleges and partner high schools can be a key component to overcoming the challenge. If the state supported data sharing agreements, similar to a clearinghouse, multiple measures initiatives could be scaled to include a much larger portion of the incoming population.

For students unable to utilize multiple measures for placement, Accuplacer placement tests provide placement decisions. To enhance the placement level in developmental and credit sequences several districts have mandated an information session or tutorial geared towards teaching students about the tests, the tests' importance in the placement process, and practice opportunities. Arizona community college also provide boot camps and summer bridge sessions, offering face to face opportunities for students to brush-up on foundational skills. These activities support both first-time test takers and students looking to earn a higher placement to access particular courses or programs. The placement process in community colleges has undergone significant change in the last five years. Dedicated professionals are utilizing national research and are sharing best practice activities, in an effort to increase the effectiveness of the placement process.

Arizona's public universities, like most public universities, require specific admissions requirements (high school grade point average, specific core high school courses, SAT or ACT test scores) that eliminate the general need for developmental education courses. Mathematics, however, is a subject that has required ASU, NAU, and UA to expand offerings below the transfer credit level. The University of Arizona provides a program, Schedule for Success Program, which captures the holistic nature of developmental education. Once a student takes the ALEKS placement test and scores below a specified threshold, the student is automatically required to enroll in the program. The program includes two courses, a hybrid math course designed to improve the student's basic algebra skills, and a second course designed to improve student study skills. The program includes individual meetings with a learning specialist and unlimited access to free tutoring. Students also have the option to use diagnostic ALEKS learning modules to practice before re-taking the placement exam. NAU offers a similar 100 level course that provides students with basic algebra skills. ASU does not place a student below the level of College Algebra or the statewide Quantitative Literacy course (MAT142). NAU and ASU also provide the opportunity to retake the placement tests after practicing within the program.

ALEKS Placement, Preparation and Learning (ALEKS PPL) is a web-based program that uses artificial intelligence to map a student's strengths and weaknesses. After the Placement Assessment, an individualized Prep and Learning Module is available for students to refresh their knowledge on forgotten topics. Students then have the opportunity to reassess and improve their placement.

46 https://www.maricopa.edu/become-a-student/placement, accessed February 2019

Curriculum/Structural Redesign

A second opportunity for colleges to support a student's experience to and through a gateway course is to redesign the structural and curricular make-up of courses. Developmental courses (typically below the 100 or 1000 level) are often part of a course sequence that includes as many as four developmental courses in preparation for credit bearing college courses in mathematics and English. In attempts to accelerate the pathway, colleges have: implemented modularized, self-paced courses, combined disciplines to create a singular course of integrated reading and writing, provided just in time support through **Integrated Basic Education Skills Training** (IBEST)[47], bridges/boot camps and co-requisite courses, and offered accelerated sessions (8-week). Curricular alignment in mathematics is also a national agenda. Realizing that a strong algebra curriculum is not the best mathematical literacy for all programs of study, efforts nationwide have focused on statistics, quantitative literacy courses, and embedded basic skills for career and technical programs. By altering the mathematics curriculum at the credit level, developmental mathematics sequences have adjusted as well, streamlining the developmental needs to fit the program's mathematics requirement. Efforts have also focused on the classroom environment to ensure success rates in developmental courses are maximized without losing the required rigor to be effective in follow-up courses. Professional development targets a majority contingent faculty with active learning techniques, technology integration, andragogical considerations, and general college specific knowledge.

Course reform in Arizona has focused on several national initiatives. In English, the co-requisite model, albeit in different forms, has been implemented at multiple colleges across the state and other colleges have expressed interest in incorporating the concept. Design varies, but the essential concept is to provide students that are not prepared for ENG101, based on a placement test recommendation, an ENG101 course that includes extra support along the way. Students avoid a semester of developmental writing and earn ENG101 credit. The concept gained national acclaim out of the Community College of Baltimore County, known for its **ALP model**[48]. The general concept of co-requisite coursework continues to be touted by non-profit organizations such as Complete College America. Mathematics departments have not fully embraced the concept in Arizona, although statewide efforts are underway to increase corequisite opportunities.

Mathematics experiences a greater success problem both nationally and locally and thus has had multiple national reform movements over the last decade and a half. One is the idea of modularizing the mathematics curriculum. The number of modules varies dramatically across the models, ranging from 35, covering every topic within developmental mathematics, to 5, more of a course based approach. This movement has had mixed results nationally and Arizona has experienced a similar trend. Pima Community College's model is being sunset due to a lack of student success in semester courses and lengthy completion time table. Maricopa has embarked module pathway that looks to provide a diagnostic approach for

47 https://ccrc.tc.columbia.edu/media/k2/attachments/how-i-best-works-findings.pdf

48 http://alp-deved.org/, accessed February 2019

students, completing only those modules they have not mastered. Other community colleges in the state have or are offering a modularized approach. With the increase in interest to create clear math pathways, the modularized option is having mixed success.

The Mathways concept has gained momentum in the state. MAT14X, a quantitative reasoning course, has historically been difficult to fill in many parts of the state as university programs seldom included it as a possible program mathematics course. Students, often unsure of their transfer degree plans, will either self-advise or be told by advisors to take the safe route and enroll in the algebra pathway, MAT15X. This often requires multiple levels of developmental math courses. Since MAT14X does not require the same depth of algebra concepts, and thus does not need the multiple algebra based developmental courses required for college algebra or precalculus courses, a one year throughput with aligned course outcomes will provide a better fit for many students not entering business and STEM fields. A critical component of this concept is the degree alignment with the state universities. Although the quantitative reasoning course has been on the approved list of math Arizona General Education Courses (AGEC) for some time, 4-year degree programs need to clearly align themselves with the course to move the enrollment needle in community colleges. Recent work with the state universities has made MAT14X a viable option. By aligning the appropriate prerequisite courses in developmental mathematics, offering corequisite options, and revising placement processes, MAT14X can be accessed in a timely manner, shortening the pipeline to a credit bearing transfer math course. Although the movement here in Arizona is not a direct descendant of the **Mathways Project**[49] in Texas or the **Quantway/Statway**[50] concept from the Carnegie Foundation, it is a step in the right direction, more closely aligning student learning outcomes in a math course with program outcomes in a degree plan.

Other promising practices:

LEARNING COMMUNITIES

Creating cohorts of learners that connect to course learning outcomes through a common and relevant theme

Contextualized courses

8

Eight week accelerated models

49 https://www.utdanacenter.org/our-work/higher-education/dana-center-mathematics-pathways, accessed February 2019

50 https://www.carnegiemathpathways.org/statway/#, accessed February 2019

Advising and Counseling

Counseling and advising is focused, in this report, on academic student support. This is not to diminish the mental health role counselors play, as this role has increased in recent years, but is the focus to highlight procedures that affect a majority of the students enrolling in community colleges. The trend in recent years has been to move away from allowing students to determine, on their own, what is best for them and to move towards informed choice. Proactive advising, a new and improved version of intrusive advising, is a great example. Although not a new concept, the idea was championed as a movement from intrusive advising to proactive advising by members of the **National Academic Advising Association** (NACADA) in 2012[51]. This change in technique, from reacting to getting out in front, is designed to enhance the motivation of students and increase success by reaching out to students before problems arise. A critical component of this practice is having the data in advance to correctly target and provide services to those exhibiting characteristics that evidence has shown to be at-risk. The concept of mandatory processes follows a similar principle. As many have agreed with an oft-heard saying "students don't do optional" (Kay McClenney) new mandatory procedures have increased. No late registration, orientations, placement tests, academic probation, and registration holds are in place to ensure students receive academic, financial, and general college-going guidance before problems arise. The Department of Education's financial aid regulations changed significantly in 2012, providing more accountability for the courses students enroll in, in an effort to support completion of certificates and degrees in a timely manner. Colleges have adjusted procedures to ensure students are less exploratory and more focused on completing the tasks required to finish the intended sequence of courses. Critics view the mandatory nature of these initiatives as barriers to enrollment. The rebuttal often centers on the fact that many community college students lack college knowledge and/or do not have individuals that can help navigate the systems required for college enrollment.

In Arizona, career exploration is a common activity in high schools and in the community college on-boarding process,, as part of information sessions, or specific to programs. A greater connection between the career exploration efforts of K-12 and community colleges is required to improve the alignment of student interests earlier in the college going conversation. As colleges in the state incorporate guided pathway principles, the concept of meta-majors (exploratory majors or areas of interest) will also support the undecided student. Colleges have begun to specialize advisors in areas or fields of interest, focusing the outreach and support based on common knowledge of programs. Mandatory new student orientations have been incorporated at Pima Community College and have continued to cycle through continuous quality improvement to ensure the sessions meet the needs of students, preparing them for their first semester. Arizona Western College's New Student Orientation, a strongly recommended activity, provides a half day experience covering financial aid, degree programs, campus resources, a tour of the facilities, and an opportunity to win a scholarship. These front-end activities provide valuable information and contact with an advisor or

51 http://www.nacada.ksu.edu/Resources/Academic-Advising-Today/View-Articles/Proactive-Intrusive-Advising.aspx

counselor, an important first step in the student engagement process. Proactive advising and case management are two concepts gaining popularity in Arizona community colleges. Maricopa Community Colleges are moving towards proactive advising as part of their guided pathways movement[52] including an assigned point of contact from the beginning. Pima Community College has established proactive and case management as a priority in the redesign of student affairs, creating and implementing new Program Advisor positions along with piloting non-cognitive assessments that support early indications of at-risk behaviors. Northland Pioneer College's Higher Learning Commission's Quality Initiative Project is titled PASS[53]. The Proactive Advising for Student Success program includes a priority of early at-risk detection and appropriate follow-up action.

Counselors and advisors in the state are also involved in piloting and/or fully implementing first semester activities that promote persistence:

- First Year Experience programs engage students in the college culture.
- Early Alert activities that reach out to students with resources and/or support in time to affect change in student behavior.

Student Support Activities

Once enrollment has begun, student support is critical. Student success courses have become mandatory components of programs of study and/or developmental completion. These courses have historically included student skills (test taking, note taking, study habits) and have more recently evolved to include student learning theory and affective behaviors. Support features such as tutoring have also seen recent proactive adjustments. The concept of embedded tutoring places a tutor in, or in near vicinity to, courses with at-risk student populations. Similar to the supplemental instruction concept, embedded tutoring focuses on courses with at-risk students, as opposed to supplemental instruction's focus on at-risk courses. Peer or program mentor programs provide students with a college guide, a person a student can feel comfortable asking anything. The social and academic support a peer mentor provides can have a tremendous effect on a student's engagement at the college, affecting persistence, retention and completion. Life happens, and when it does, it can have an adverse financial effect. Oftentimes a flat tire, parking ticket or new dependent can derail a community college student. Colleges with scholarships or mini-grants geared towards these circumstances provide a much-needed boost to the persistence and completion efforts of students.

Arizona Community Colleges run a wide variety of programs targeting student success, persistence, and retention. Student success courses are common practice in the state. Colleges differ in how they are offered, credit hours (1 - 3), and what content is covered. It is common to have a student success course paired with developmental courses in Maricopa Community Colleges and Pima Community College as learning communities. Tutor offerings

52 https://transformation.maricopa.edu/transformation-strategies/guided-pathways

53 http://www.npc.edu/benchmarks/proactive_advising

vary by college, and regularly provide support for students in mathematics, reading, and writing. As technology has enhanced the online course environment, virtual tutoring has become a valuable service for those students who can't make it to campus. Yavapai College has utilized Supplemental Instruction to support courses in and out of the developmental sequence. Pima Community College embeds tutors in English as a Second Language and lower level developmental math courses. Central Arizona College's peer mentoring program, sponsored through the TRIO grant on campus, provides sophomores the opportunity to share college knowledge with incoming freshmen. Starting with a summer bridge program in August, peer mentors provide academic and social support as new students navigate the first semester. Significant efforts continue statewide, but a common assessment and reporting structure of the effects these programs have on student success does not exist. The state does not have a coordinated effort to define and communicate best practices in student support.

All three universities are part of outreach partnerships that approach the varying challenges at-risk students face when entering higher education. Many partnerships exist, three are spotlighted here. The UA is part of the Pima County Cradle to Career partnership[54]. The partnership has representation from local community, business and educational organizations. As the title suggests, the group focuses on educational success at the earliest stages in a student's career. Kindergarten readiness is the first outcome and postsecondary completion and career attainment complete the continuum. NAU recently partnered with My AmeriCorps to place 65 people across the state, focused in low-income communities and Title 1 schools. The AmeriCorp members are trained and tasked with preparing students for on-time high school graduation and college enrollment. ASU's Hispanic/Latino Mother Daughter Program is an early outreach targets students in the seventh grade. The program connects families to resources, provides an advocate for education, and creates a support network for the family. What is evident in these partnerships, and many others, is the downward reach. The universities understand the challenges and barriers don't start in a student's junior or senior year. A college going-culture needs to be fostered early in the academic career of students.

Other student support activities include:

- Transportation, daycare and food banks supported by colleges.
- Rainy day scholarship funds to support unexpected expenses that may force students to withdraw.
- Specific affinity group space and service allocations (Veterans, LGBTQIA, Disability Resources).

College Readiness Programs in K-12

College and career readiness became a broader topic of discussion, outside education circles, with the distribution of the *College- and Career- Readiness Standards and Assessments*

54 https://www.c2cpima.org/, accessed February 2019

document in 2010. The realization of the requirement of a postsecondary credential for a majority of the jobs, predicted[55] to be 68% by 2020 for Arizona, has created a closer internal and external look into the definition. The Arizona Department of Education has a set of college and career readiness standards that work in conjunction with discipline standards covering kindergarten through 12th grade. The department also provides a **College and Career Readiness Center** website[56]. An Education and Career Action Plan (ECAP) is a required plan for every high school student. One of the benefits identified of the ECAP is to promote increased enrollment and success in more rigorous courses relevant to the student's goals. School districts provide numerous college ready activities for students. Several standard national concepts are widespread across the state: Advanced Placement courses, International Baccalaureate courses, Dual Enrollment courses, and Career and Technical Educational partnerships. On top of teaching a designed set of state standards and offering college coursework. Counselors across the state are expected to provide a comprehensive curriculum that focuses on three domains: academic, career, and social. Individual school districts support college and career readiness in the following ways:

Several high schools work closely with community colleges to provide a formal college experience through middle college or early college high school programs.

- Maricopa Community Colleges - Early College Programs
- Arizona Agribusiness and Equine Center - Several Maricopa Community Colleges and Yavapai College
- Vail Early College - Pima Community College

Several high schools have incorporated technology to support college and career readiness. Naviance and AVID are products that help districts prepare students for postsecondary education. Examples in the state include:

- Naviance at Flagstaff High School
- Ready Now Yuma
- Naviance at Scottsdale Unified School District
- AVID at Chandler Unified School District
- AVID at Sunnyside Unified School District
- Phoenix Union High School District - **Prepare for Your Future** Website[57]

ECAP - An ECAP (Education and Career Action Plan) reflects a student's current plan of coursework, career aspirations, and extended learning opportunities in order to develop the student's individual academic and career goals.

55 https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.FR_.Web_.pdf

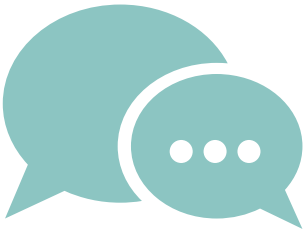
56 https://www.azed.gov/ccr/standards/, accessed February 2019

57 https://www.phoenixunion.org/Page/6364, accessed February 2019

High schools have partnered with other entities to promote a college going culture.

- City - Tempe **College Connect**[58]
- Mesa Public Schools - ASU **Hispanic Mother Daughter Program**[59]
- Parent focus - UA College Academy for parents

Communicating with High School Counselors, Students and Parents



Community colleges coordinate work with local high school districts to support a college going mindset through grants, community organizations, and one to one campus to high school partnerships. National grant programs, such as **Upward Bound**[60], are commonplace in community colleges. The U.S. Department of Education sponsored Upward Bound grant program provides low-income families and students without a parent who's earned a bachelor's degree support in preparation for college. Upward Bound projects target instruction in mathematics, science, writing, literature and foreign language with a goal to increase high school completion, college enrollment and college completion. This 5-year grant award often provides tutoring, mentoring, counseling support, and financial literacy information. Recent Upward Bound recipients in Arizona include Arizona Western College, Gateway Community College, Pima Community College, South Mountain Community College, and both ASU and NAU. Upward Bound is one of several programs under the Federal TRIO program umbrella. Talent Search is a similar grant program that provides services to identify students with the aptitude for college, provides support for securing financial support, and motivates students to complete secondary and postsecondary credentials. Activities often include academic tutoring, high school course selection to prepare for college, FAFSA completion[61], and standardized test preparation. Yavapai College, Pima Community College, Arizona Western College, ASU and NAU are current Talent Search grantees.

Although these grants are excellent tools, they are not scalable, reaching a population limited by the grant funding. National non-profit organizations, like StriveTogether, help create community groups focused on increasing access and success in secondary and postsecondary education. Currently three StriveTogether partnerships exist in Arizona: Pima County's Cradle to Career, Flagstaff's LaunchFlagstaff initiative, and Phoenix's Thriving Together. The programs focus on bringing all sectors of a community to the table with a common goal to provide equal opportunities to succeed in school, go to college, and secure a career that will support the individual, the family, the local community and society as a whole. College and high school partnerships can support the day to day operational components of preparing for college. As processes, courses

58 https://www.tempe.gov/government/human-services/education-families-youth-development/college-connect-tempe

59 https://eoss.asu.edu/hmdp, accessed February 2019

60 https://ed.gov/programs/trioupbound/index.html, accessed February 2019

61 https://fafsachallenge.az.gov/, accessed February 2019

and programs change every year at community colleges internal communication can be clumsy, thus external communication often suffers as well. Designating a K-12 liaison and charging the individual with creating and carrying-out a communication plan provides a connection, a problem solver for high school students, parents, and counselors. To support the enrollment process, colleges can also provide the following:

COUNSELORS

- Invite all local counselors to an annual campus convening
- Create a quarterly newsletter planned around key college dates
- Invite high school counselors to be part of college work teams focused on onboarding or dual enrollment initiatives

PARENTS

- Provide FAFSA information sessions in the community
  - Early and often with Spanish speaking options
- Make connections with parents early in the student's secondary career
  - Senior year is too late
- Create an easy to follow "parent" webpage
  - Include options for Spanish and other languages

STUDENTS

- Meet them where they are
  - Applications, placement, FAFSA support at the high school
- Communicate with appropriate medium
  - Social Media
- Create an easy to follow webpage

Data Availability and Tracking

Education data within Arizona is comprised of a diverse set of data collected through different local systems that do not currently communicate electronically. High school data are collected by individual districts and stored centrally by the Arizona Department of Education, but those records are not easily accessible by the community colleges or universities.

Community college data are gathered and stored at each individual institution. There is a statewide data system for the community colleges and universities, the Arizona State System for Information on Student Transfers (ASSIST)[62]. Each college and university in the state submits data to ASSIST including enrollment and completion data. Individual institutions can access the data in ASSIST and study outcomes for students previously at their institution who

62 https://www.manula.com/manuals/aztransfer/assist-users-manual/1/en/topic/about-assist, accessed February 2019

are now in higher education elsewhere in Arizona. ASSIST provides a valuable data source for the longitudinal tracking of students from institution to institution within the state, at a detailed level that includes data by individual courses. There is a limitation to the ASSIST data in regard to developmental education because different colleges place students into developmental education according to different placement processes. As a result, there are inconsistencies institution to institution in terms of how specific placement scores are used by colleges. Thus, aggregating across colleges through ASSIST will not necessarily yield meaningful, comparable information and it can make it challenging to assess what is working beyond a single college or district. This is not a fault of the ASSIST system, but more a limitation introduced by the lack of a consistent approach to developmental education from community college to community college.

There is limited access to employment data on former community college students, impacting studies on the final measure of student success - employment.

While individual data sharing agreements exist between some schools and some higher education providers, the current lack of connectedness in data systems from the high schools to post-secondary to employment creates a barrier to a full understanding of successful pathways through the education system, including both pathways that include developmental education and those that do not.

There is potential for change in this area. Per Arizona Revised Statute 41-5404, a State Workforce Evaluation Data System is to be developed, led by a Workforce Data Task Force. This is being developed as a longitudinal system that will link K-12, postsecondary and workforce data systems. While development of the system is in the early stages, the implications of developing such a system are profound for education in Arizona.

NATIONAL RECOMMENDATIONS

Developmental Education: An Introduction for Policy makers
By Elizabeth Ganga, Amy Mazzariello, and Nikki Edgecombe for the Education Commission of the States (ECS) and the Center for the Analysis of Postsecondary Readiness (CAPR)
February 2018

How Can Policy Makers Tackle the Challenges?

1. Improve the accuracy of assessment and placement.
2. Consider strategies to minimize attrition and accelerate students' progress into college-level courses.
3. Provide more structured, coherent paths through developmental requirements, and make them relevant to programs of study.
4. For students with significant needs, consider a sustained and intensive approach with wraparound supports.
5. Pair developmental education reforms with comprehensive institutional reforms.

A Framework for Assessing Developmental Education Programs
By Molly Goldwasser, Kimberly Martin, and Eugenia Harris
Journal of Developmental Education, Winter 2017

Best Practices

Cost

- Keep costs of developmental education between 1 and 3 % of the total budget.
- Keep costs of developmental education courses below those of college level courses.
- Monitor cost per FTE.
- Do not operate at a loss.
- Integrate technology to reduce cost.
- Offset costs with grant funding.

Structure

- Stated institutional commitment and clearly defined mission statement.
- Centralized or highly coordinated program.
- Collaboration among faculty and student services personnel.
- Curricular alignment between and among developmental and nondevelopmental courses.
- Ongoing systematic program evaluation.
- Adjunct faculty integrated within the program and college community.

- Professional development offered to faculty.
- Comprehensive support services provided to students.
- Accelerated options for completing developmental coursework.

Placement

- Use multiple measures.
- Create and disseminate placement test prep materials.
- Mandatory assessment for placement.
- Alignment of placement assessment and curricula.
- Offer corequisite options for students near next level placement.

Strategies for postsecondary students in developmental education – A practice guide for college and university administrators, advisors, and faculty
By Thomas Bailey et.al. for Institute of Educational Services (IES)
Report, November 2016

Six Recommendations

1. Use multiple measures to assess postsecondary readiness and place students.
2. Require or incentivize regular participation in enhanced advising activities.
3. Offer students performance-based monetary incentives.
4. Compress or mainstream developmental education with course redesign.
5. Teach students how to become self-regulated learners.
6. Implement comprehensive, integrated, and long-lasting support programs.

Developmental Strategies for College Readiness and Success
By Mary Fulton, Matt Gianneschi, Cheryl Blanco, and Paul DeMaria for the Education Commission of the States (ECS)
Resource Guide, April 2014

Eight Strategies

1. Transitional courses and dual enrollment.
2. Diagnostic assessments, multiple measures, and directed self-placement.
3. Assessment test preparation and retesting opportunities.
4. Differentiated math pathways.
5. Co-requisite instruction.
6. Accelerated and stretch courses.
7. Modularized and self-paced instruction.
8. Student support.

Moving Beyond Access: College Success for Low-Income, First Generation Students
By Jennifer Engle and Vincent Tinto
The Pell Institute for the Study of Opportunity in Higher Education
2008

Recommendations for practitioners and policy makers

- Improve Academic Preparation for College.
- Provide additional financial aid.
- Increase transfer rates.
- Ease the transition to college.
- Encourage engagement on the campus.
- Promote (re)entry for working adults.

AMEPAC RECOMMENDATIONS

The national recommendations focus on initiatives largely driven through state systems (California, Florida, North Carolina, Texas) that provide the necessary research, resources, and organizational support, or national organization membership (Achieving the Dream, NADE, Complete College America) that supports specific reform. For Arizona to move the needle on attainment, the state must rally behind initiatives that work to support at-risk students, which includes holistic support for current college students, preparation and education for high school students, systemic changes for students in K-8, and strong partnerships in a comprehensive P-20 system that shares data to effectively support our state's investment in the future. Below are the Arizona Minority Education Policy Analysis Center's recommendations for addressing developmental education in Arizona.

- Continuously assess the effectiveness of multiple measure placement processes, just in time academic support (e.g. co-requisite support), and non-cognitive support in a continuous improvement cycle.
- Increase the presence and fund programs that promote college-going culture early in students' educational experience, such as dual enrollment and early college programs.
- Invest and fund career and technical initiatives that contextualize and integrate developmental learning outcomes, such as the Integrated Basic Education Skills Training (IBEST)[63] instructional model.
- Create partnerships among Arizona K-12 institutions, community colleges, and universities to better utilize and seamlessly exchange data, such as Cradle to Career Partnership[64] in Tucson. This partnership follows four elements to the collective impact framework: shared community vision, evidence-based decision making, collaborative action, and investment and sustainability.
- Continue developing a state-wide longitudinal data system linking K-12 to higher education and that includes developmental education data.
- Increase funding to boost the number of counselors (K-12 and higher education) with a goal of reducing the counselor to student ratio.
- Create, in conjunction with community colleges and universities, transition or college prep courses for at-risk/underserved student populations.
- Share student information such as the Education and Career Action Plan (ECAP) and transcript information with colleges and universities to support holistic assessment and multiple measures.

63 https://ccrc.tc.columbia.edu/media/k2/attachments/how-i-best-works-findings.pdf

64 https://www.c2cpima.org/

- Provide holistic support to students, including non-cognitive and basic needs, to remove barriers to their academic success. This could include basic need assistance with food, housing, transportation, and childcare. Examples of non-cognitive assistance could include topics such as mindset, time-management, self-efficacy, and mindfulness.
- Strategically connect and collaborate with the Arizona Association for Developmental Education and the National Organization for Student Success.
- Establish a method of state-wide collaboration among higher education leaders engaged in developmental education efforts.
- Expand assigning college liaisons to increase communication and collaboration with K-12 districts.

Concluding Remarks

To eliminate the achievement gap and meet the goals of Achieve60AZ, Arizona needs to; reconsider how funds are allocated to focus resources on supporting best practices based on statewide evidence, support cross-functional community teams working to provide equity in education, and coordinate efforts aimed at college and career readiness. If the state is to move the needle on postsecondary credentials by 2030, college and career readiness needs to be at the forefront of the effort. High schools play a significant role in preparing students, and efforts are being made to increase the number of graduates that enter college prepared for success. Developmental education plays a role for those that aren't ready to succeed. Recent high school graduates or new traditional students may not be prepared for the rigors of a college program and require support to succeed. The role of developmental education has and continues to change, but the challenge remains the same, students will enter unprepared and will require holistic support. Knowing this, it is imperative that colleges are funded to meet the challenges the unprepared student will face, faculty and staff are supported in the creation and scaling of successful programs, and efforts exist across educational systems focused on student success with an equity-mindedness lens.

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Mohave Community College
Sylvia Gibson, Interim Executive Director Institutional Planning, Research & Effectiveness,
Central Arizona College
Tom Hughes, Director of Institutional Effectiveness and Research,
Yavapai Community College

PIMA COMMUNITY COLLEGE STAFF

Himelda Davidson, Graphic Designer/Media Designer
Del Dawley, Information Technology Principal Analyst
Joseph Erker, Research Advanced Analyst
Michelle Henry, Research Specialist
Bryce Morthland, Advanced Program Manager, Media Production and Publication
Ana Unda, Research Advanced Analyst

APPENDIX A - DEMOGRAPHICS AND OUTCOMES

The following tables present aggregate data on the demographics and outcomes of students in developmental educationare from the Arizona State System for Information on Student Tranfers (ASSIST). While there are core data elements that all colleges submit to ASSIST, other fields are optional. Therefore, across the tables, the data reflect the subset of Arizona colleges for which the data are available. For each set of data provided here, the sample of colleges includes at least one of the major urban colleges and the majority of the rural institutions.

DEMOGRAPHICS OF ALL STUDENTS AT ARIZONA COMMUNITY COLLEGES										
	2011-2012		2012-2013		2013-2014		2014-2015		2015-2016	
Total	235,528		274,397		264,312		253,495		242,805	
GENDER	**2011-2012**		**2012-2013**		**2013-2014**		**2 014-2015**		**2015-2016**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Female	126,916	53.9%	150,340	54.8%	143,951	54.5%	138,420	54.6%	133,105	54.8%
Male	105,672	44.9%	120,850	44.0%	117,428	44.4%	112,096	44.2%	106,796	44.0%
Not reported, Unknown	2,940	1.2%	3,207	1.2%	2,933	1.1%	2,979	1.2%	2,904	1.2%
Total	235,528	100.0%	274,397	100.0%	264,312	100.0%	253,495	100.0%	242,805	100.0%
AGE	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Under 18	25,621	10.9%	28,291	10.3%	29,602	11.2%	29,779	11.7%	29,895	12.3%
18-19	43,028	18.3%	46,026	16.8%	45,670	17.3%	45,196	17.8%	44,326	18.3%
20-21	33,978	14.4%	37,358	13.6%	36,521	13.8%	35,973	14.2%	35,618	14.7%
22-24	30,759	13.1%	36,628	13.3%	35,359	13.4%	34,154	13.5%	32,375	13.3%
25-29	31,999	13.6%	38,301	14.0%	35,983	13.6%	34,345	13.5%	32,541	13.4%
30-34	20,477	8.7%	25,283	9.2%	23,383	8.8%	21,836	8.6%	19,923	8.2%
35-39	13,466	5.7%	17,099	6.2%	15,677	5.9%	14,685	5.8%	13,630	5.6%
40-49	18,791	8.0%	23,942	8.7%	21,527	8.1%	19,016	7.5%	17,449	7.2%
50-64	13,603	5.8%	17,248	6.3%	16,102	6.1%	14,110	5.6%	12,707	5.2%
65 and over	3,434	1.5%	3,868	1.4%	4,155	1.6%	4,087	1.6%	4,080	1.7%
Age unknown/unreported	372	0.2%	353	0.1%	333	0.1%	314	0.1%	261	0.1%
Total	235,528	100.0%	274,397	100.0%	264,312	100.0%	253,495	100.0%	242,805	100.0%
RACE/ETHNICITY	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
American Indian	9,287	3.9%	10,651	3.9%	10,039	3.8%	8,180	3.2%	7,652	3.2%
Asian	7,719	3.3%	8,377	3.1%	8,199	3.1%	7,803	3.1%	7,434	3.1%
Black	16,333	6.9%	19,678	7.2%	17,538	6.6%	15,834	6.2%	14,245	5.9%
Hispanic	57,306	24.3%	63,954	23.3%	64,045	24.2%	65,395	25.8%	66,229	27.3%
Pacific Islander	621	0.3%	745	0.3%	724	0.3%	758	0.3%	698	0.3%
International	3,223	1.4%	3,799	1.4%	3,850	1.5%	4,008	1.6%	4,184	1.7%
Unknown	16,945	7.2%	28,891	10.5%	30,970	11.7%	30,987	12.2%	30,804	12.7%
Two or More Races	3,303	1.4%	4,136	1.5%	4,391	1.7%	4,698	1.9%	4,945	2.0%
White, Non-Hispanic	120,791	51.3%	134,166	48.9%	124,556	47.1%	115,832	45.7%	106,614	43.9%
Total	235,528	100.0%	274,397	100.0%	264,312	100.0%	253,495	100.0%	242,805	100.0%

Notes:
Excluded institutions : Pima Community Collge (no dev ed data).
No dev ed data for Coconino Community College and Mohave Community College in 2011-2012

Are included students who attended any positive amount of credit hours.
Student = cc_enrollment.term_attemptd_hours > 0

DEMOGRAPHICS OF ALL STUDENT WHO ATTEMPTED DEVELOPMENTAL EDUCATION COURSES AT ARIZONA COMMUNITY COLLEGES										
DEVELOPMENTAL EDUCATION STATUS	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Developmental Education	48,784	20.7%	49,033	17.9%	44,822	17.0%	42,511	16.8%	40,194	16.6%
Not Developmental Education	186,744	79.3%	225,364	82.1%	219,490	83.0%	210,984	83.2%	202,611	83.4%
Total	235,528	100.0%	274,397	100.0%	264,312	100.0%	253,495	100.0%	242,805	100.0%
GENDER	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Female	27,359	56.1%	27,664	56.4%	24,822	55.4%	23,755	55.9%	22,625	56.3%
Male	20,874	42.8%	20,869	42.6%	19,562	43.6%	18,307	43.1%	17,061	42.4%
Not reported, Unknown	551	1.1%	500	1.0%	438	1.0%	449	1.1%	508	1.3%
Total	48,784	100.0%	49,033	100.0%	44,822	100.0%	42,511	100.0%	40,194	100.0%
AGE	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Under 18	2,406	4.9%	2,156	4.4%	1,946	4.3%	1,594	3.7%	1,533	3.8%
18-19	14,670	30.1%	13,538	27.6%	12,594	28.1%	13,224	31.1%	12,878	32.0%
20-21	7,272	14.9%	7,308	14.9%	6,601	14.7%	6,228	14.7%	5,814	14.5%
22-24	5,792	11.9%	5,889	12.0%	5,404	12.1%	5,212	12.3%	4,823	12.0%
25-29	5,980	12.3%	6,137	12.5%	5,724	12.8%	5,328	12.5%	5,118	12.7%
30-34	3,984	8.2%	4,319	8.8%	3,832	8.5%	3,417	8.0%	3,158	7.9%
35-39	2,776	5.7%	2,953	6.0%	2,638	5.9%	2,383	5.6%	2,222	5.5%
40-49	3,749	7.7%	4,149	8.5%	3,615	8.1%	3,074	7.2%	2,854	7.1%
50-64	1,865	3.8%	2,286	4.7%	2,173	4.8%	1,743	4.1%	1,524	3.8%
65 and over	231	0.5%	252	0.5%	238	0.5%	260	0.6%	222	0.6%
Age unknown/unreported	59	0.1%	46	0.1%	57	0.1%	48	0.1%	48	0.1%
Total	48,784	100.0%	49,033	100.0%	44,822	100.0%	42,511	100.0%	40,194	100.0%
RACE/ETHNICITY	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
American Indian	2,957	6.1%	2,911	5.9%	2,560	5.7%	2,026	4.8%	2,051	5.1%
Asian	1,580	3.2%	1,448	3.0%	1,451	3.2%	1,322	3.1%	1,223	3.0%
Black	4,947	10.1%	4,921	10.0%	4,344	9.7%	3,663	8.6%	3,409	8.5%
Hispanic	15,964	32.7%	15,653	31.9%	14,221	31.7%	14,380	33.8%	14,102	35.1%
Pacific Islander	157	0.3%	180	0.4%	165	0.4%	147	0.3%	136	0.3%
International	1,387	2.8%	1,458	3.0%	1,518	3.4%	1,397	3.3%	1,319	3.3%
Unknown	3,711	7.6%	4,790	9.8%	4,606	10.3%	4,410	10.4%	4,175	10.4%
Two or More Races	660	1.4%	722	1.5%	730	1.6%	819	1.9%	837	2.1%
White, Non-Hispanic	17,421	35.7%	16,950	34.6%	15,227	34.0%	14,347	33.7%	12,942	32.2%
Total	48,784	100.0%	49,033	100.0%	44,822	100.0%	42,511	100.0%	40,194	100.0%

Notes:
Excluded institutions : Pima Community Collge (no dev ed data).
No dev ed data for Coconino Community College and Mohave Community College in 2011-2012

Students are counted as developmental education students if they attended any positive amount of credit hours in any developmental course.
Dev Ed Student = cc_enrollment.term_attemptd_develop_hours > 0

Notes:
Excluded institutions : Pima Community Collge (no dev ed data).
No dev ed data for Coconino Community College and Mohave Community College in 2011-2012
Students are counted as developmental education students if they attended any positive amount of credit hours in any developmental course at any time of their enrollment in community college.

DEMOGRAPHICS OF ALL STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATION COURSES AT ANY TIME DURING COLLEGE ENROLLMENT AT ARIZONA COMMUNITY COLLEGES

	2011-2012				2012-2013			
TOTAL STUDENTS per YEAR	**All Students**		**Ever Attempted Dev Ed**		**All Students**		**Ever Attempted Dev Ed**	
	#	#	%		#		#	%
	235,528	109,056	46%		274,397		117,099	43%
GENDER	**2011-2012**				**2012-2013**			
	All Students		**Ever Attempted Dev Ed**		**All Students**		**Ever Attempted Dev Ed**	
	#	%	#	%	#	%	#	%
Female	126,916	54%	62,722	58%	150,340	55%	67,814	58%
Male	105,672	45%	45,130	41%	120,850	44%	48,120	41%
Not reported	2,940	1%	1,204	1%	3,207	1%	1,165	1%
Total	235,528	100%	109,056	100%	274,397	100%	117,099	100%
AGE	**2011-2012**				**2012-2013**			
	All Students		**Ever Attempted Dev Ed**		**All Students**		**Ever Attempted Dev Ed**	
	#	%	#	%	#	%	#	%
Under 18	25,621	11%	5,822	5%	28,291	10%	5,821	5%
18-19	43,028	18%	20,620	19%	46,026	17%	19,970	17%
20-21	33,978	14%	17,352	16%	37,358	14%	17,770	15%
22-24	30,759	13%	15,735	14%	36,628	13%	17,396	15%
25-29	31,999	14%	17,309	16%	38,301	14%	18,803	16%
30-34	20,477	9%	11,214	10%	25,283	9%	12,730	11%
35-39	13,466	6%	7,154	7%	17,099	6%	8,429	7%
40-49	18,791	8%	8,870	8%	23,942	9%	10,155	9%
50-64	13,603	6%	4,378	4%	17,248	6%	5,400	5%
65 and over	3,434	1%	505	0%	3,868	1%	549	0%
Age unknown	372	0%	97	0%	353	0%	76	0%
Total	235,528	100%	109,056	100%	274,397	100%	117,099	100%
ETHNICITY	**2011-2012**				**2012-2013**			
	All Students		**Ever Attempted Dev Ed**		**All Students**		**Ever Attempted Dev Ed**	
	#	%	#	%	#	%	#	%
American Indian	9,287	4%	5,753	5%	10,651	4%	5,959	5%
Asian	7,719	3%	3,335	3%	8,377	3%	3,350	3%
Black	16,333	7%	9,548	9%	19,678	7%	10,134	9%
Hispanic	57,306	24%	33,872	31%	63,954	23%	36,032	31%
Pacific Islander	621	0%	274	0%	745	0%	311	0%
International	3,223	1%	2,147	2%	3,799	1%	2,295	2%
Unknown	16,945	7%	6,768	6%	28,891	11%	9,687	8%

Continued

DEMOGRAPHICS OF ALL STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATION COURSES AT ANY TIME DURING COLLEGE ENROLLMENT AT ARIZONA COMMUNITY COLLEGES

2013-2014				2014-2015				2015-2016			
All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed	
#		#	%	#		#	%	#		#	%
264,312		112,189	42%	253,495		107,299	42%	242,805		100,024	41%

2013-2014				2014-2015				2015-2016			
All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed	
#	%	#	%	#	%	#	%	#	%	#	%
143,951	54%	64,527	58%	138,420	55%	61,484	57%	133,105	55%	57,427	57%
117,428	44%	46,603	42%	112,096	44%	44,737	42%	106,796	44%	41,535	42%
2,933	1%	1,059	1%	2,979	1%	1,078	1%	2,904	1%	1,062	1%
264,312	100%	112,189	100%	253,495	100%	107,299	100%	242,805	100%	100,024	100%

2013-2014				2014-2015				2015-2016			
All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed	
#	%	#	%	#	%	#	%	#	%	#	%
29,602	11%	5,352	5%	29,779	12%	4,497	4%	29,895	12%	3,257	3%
45,670	17%	18,794	17%	45,196	18%	18,899	18%	44,326	18%	18,403	18%
36,521	14%	17,540	16%	35,973	14%	16,802	16%	35,618	15%	15,932	16%
35,359	13%	16,927	15%	34,154	13%	16,721	16%	32,375	13%	15,724	16%
35,983	14%	17,967	16%	34,345	14%	17,333	16%	32,541	13%	16,398	16%
23,383	9%	12,102	11%	21,836	9%	11,376	11%	19,923	8%	10,452	10%
15,677	6%	8,015	7%	14,685	6%	7,653	7%	13,630	6%	7,052	7%
21,527	8%	9,535	8%	19,016	8%	8,630	8%	17,449	7%	7,964	8%
16,102	6%	5,252	5%	14,110	6%	4,689	4%	12,707	5%	4,177	4%
4,155	2%	628	1%	4,087	2%	637	1%	4,080	2%	607	1%
333	0%	77	0%	314	0%	62	0%	261	0%	58	0%
264,312	100%	112,189	100%	253,495	100%	107,299	100%	242,805	100%	100,024	100%

2013-2014				2014-2015				2015-2016			
All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed		All Students		Ever Attempted Dev Ed	
#	%	#	%	#	%	#	%	#	%	#	%
10,039	4%	5,512	5%	8,180	3%	4,608	4%	7,652	3%	4,194	4%
8,199	3%	3,284	3%	7,803	3%	3,125	3%	7,434	3%	2,911	3%
17,538	7%	9,347	8%	15,834	6%	8,538	8%	14,245	6%	7,658	8%
64,045	24%	34,983	31%	65,395	26%	35,343	33%	66,229	27%	34,724	35%
724	0%	325	0%	758	0%	333	0%	698	0%	296	0%
3,850	1%	2,277	2%	4,008	2%	2,221	2%	4,184	2%	2,218	2%
30,970	12%	11,066	10%	30,987	12%	10,613	10%	30,804	13%	9,728	10%

Notes:
Excluded institutions : Pima Community Collge (no dev ed data).
No dev ed data for Coconino Community College and Mohave Community College in 2011-2012

Students are counted as developmental education students if they attended any positive amount of credit hours in any developmental course. Dev Ed Student = cc_enrollment.term_attemptd_develop_hours > 0

Course Enrollment = enrolled in a course with cc_course.course_credit_hours > 0

Successful Course Completion means completion of course with grade A, B, C, P or their honor equivalents.
Successful Course Completions = grade of C or better (A,B,C,P,AH,BH,CH,XA,XB,XC,XP) in a course enrollment

Successful Course Completions Rate = number of Successful Course Completions divided by number of Course Enrollments

SUCCESSFUL COURSE COMPLETIONS RATE FOR STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATION COURSES

TOTAL ENROLLMENT and COMPLETIONS	2011-2012			2012-2013		
	All	Successful	Percent Successful	All	Successful	Percent Successful
Total	263,008	174,663	66.4%	254,246	168,575	66.3%
GENDER	**2011-2012**			**2012-2013**		
	All	Successful	Percent Successful	All	Successful	Percent Successful
Female	145,247	99,264	68.3%	140,820	95,883	68.1%
Male	115,247	73,652	63.9%	111,142	71,168	64.0%
Not reported, Unknown	2,514	1,747	69.5%	2,284	1,524	66.7%
Total	**263,008**	**174,663**	N/A	**254,246**	**168,575**	N/A
AGE	**2011-2012**			**2012-2013**		
	All	Successful	Percent Successful	All	Successful	Percent Successful
Under 18	7,884	6,031	76.5%	7,083	5,545	78.3%
18-19	94,898	61,784	65.1%	83,991	55,004	65.5%
20-21	39,784	24,046	60.4%	38,446	23,427	60.9%
22-24	29,510	18,844	63.9%	28,886	18,144	62.8%
25-29	30,459	20,797	68.3%	30,242	20,528	67.9%
30-34	19,687	13,641	69.3%	20,862	14,462	69.3%
35-39	13,365	9,697	72.6%	14,253	9,996	70.1%
40-49	18,183	13,179	72.5%	19,041	13,430	70.5%
50-64	8,441	6,145	72.8%	10,518	7,422	70.6%
65 and over	707	422	59.7%	853	551	64.6%
Age unknown/unreported	90	77	85.6%	71	66	93.0%
Total	**263,008**	**174,663**	N/A	**254,246**	**168,575**	N/A
ETHNICITY	**2011-2012**			**2012-2013**		
	All	Successful	Percent Successful	All	Successful	Percent Successful
American Indian	15,271	8,999	58.9%	14,379	8,527	59.3%
Asian	7,805	6,012	77.0%	6,966	5,514	79.2%
Black	27,767	16,128	58.1%	26,984	15,553	57.6%
Hispanic	84,609	55,815	66.0%	79,571	53,257	66.9%
Pacific Islander	965	583	60.4%	975	654	67.1%
International	6,048	4,025	66.6%	6,238	4,195	67.2%
Unknown	19,702	13,318	67.6%	25,101	16,344	65.1%
Two or More Races	3,889	2,533	65.1%	4,077	2,519	61.8%
White, Non-Hispanic	96,952	67,250	69.4%	89,955	62,012	68.9%
Total	**263,008**	**174,663**	**N/A**	**254,246**	**168,575**	**N/A**

Continued

SUCCESSFUL COURSE COMPLETIONS RATE FOR STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATION COURSES								
2013-2014			**2014-2015**			**2015-2016**		
All	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**
229,716	156,401	68.1%	223,814	156,299	69.8%	210,927	148,580	70.4%
2013-2014			**2014-2015**			**2015-2016**		
All	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**
124,468	86,568	69.6%	122,992	88,180	71.7%	116,759	84,037	72.0%
103,336	68,480	66.3%	98,720	66,637	67.5%	91,790	62,846	68.5%
1,912	1,353	70.8%	2,102	1,482	70.5%	2,378	1,697	71.4%
229,716	**156,401**	N/A	**223,814**	**156,299**	N/A	**210,927**	**148,580**	N/A
2013-2014			**2014-2015**			**2015-2016**		
All	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**
6,064	4,752	78.4%	4,854	3,942	81.2%	5,019	4,060	80.9%
78,412	52,815	67.4%	83,815	58,890	70.3%	81,260	57,094	70.3%
34,160	21,678	63.5%	33,012	21,422	64.9%	31,784	21,126	66.5%
25,854	16,868	65.2%	25,561	17,168	67.2%	23,871	16,479	69.0%
27,739	19,333	69.7%	26,196	18,221	69.6%	24,397	17,200	70.5%
18,000	12,721	70.7%	15,977	11,641	72.9%	14,806	10,817	73.1%
12,112	8,501	70.2%	11,294	8,269	73.2%	10,063	7,346	73.0%
16,334	11,733	71.8%	14,318	10,528	73.5%	12,624	9,398	74.4%
10,132	7,363	72.7%	7,853	5,571	70.9%	6,293	4,490	71.3%
814	551	67.7%	845	563	66.6%	727	506	69.6%
95	86	90.5%	89	84	94.4%	83	64	77.1%
229,716	**156,401**	N/A	**223,814**	**156,299**	N/A	**210,927**	**148,580**	N/A
2013-2014			**2014-2015**			**2015-2016**		
All	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**	**All**	**Successful**	**Percent Successful**
12,440	7,659	61.6%	10,189	6,287	61.7%	9,966	6,279	63.0%
6,792	5,340	78.6%	6,308	5,010	79.4%	5,963	4,691	78.7%
23,879	14,535	60.9%	20,273	12,572	62.0%	18,953	12,087	63.8%
71,442	49,358	69.1%	74,484	52,410	70.4%	73,742	52,156	70.7%
978	627	64.1%	927	647	69.8%	829	547	66.0%
7,340	5,122	69.8%	7,543	5,504	73.0%	7,371	5,508	74.7%
23,526	15,382	65.4%	23,057	15,597	67.6%	21,007	14,114	67.2%
4,097	2,648	64.6%	4,653	3,184	68.4%	4,642	3,037	65.4%
79,222	55,730	70.3%	76,380	55,088	72.1%	68,454	50,161	73.3%
229,716	**156,401**	**N/A**	**223,814**	**156,299**	**N/A**	**210,927**	**148,580**	**N/A**

FALL FULL-TIME/PART-TIME STATUS OF STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATIONAL COURSES

All Developmental Students		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016	
FT		15,554		15,821		14,867		15,164		13,929	
PT		20,207		20,133		18,020		16,979		16,815	
Total		35,761		35,954		32,887		32,143		30,744	
GENDER	**FT/PT**	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
		Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Female	FT	8,185	40.5%	8,474	41.0%	7,643	41.4%	7,991	44.1%	7,299	41.6%
	PT	12,036	59.5%	12,198	59.0%	10,797	58.6%	10,138	55.9%	10,229	58.4%
	Total	20,221	100.0%	20,672	100.0%	18,440	100.0%	18,129	100.0%	17,528	100.0%
Male	FT	7,257	47.7%	7,224	48.3%	7,133	50.3%	7,074	51.5%	6,489	50.4%
	PT	7,941	52.3%	7,723	51.7%	7,045	49.7%	6,649	48.5%	6,383	49.6%
	Total	15,198	100.0%	14,947	100.0%	14,178	100.0%	13,723	100.0%	12,872	100.0%
Not reported, Unknown	FT	112	32.7%	123	36.7%	91	33.8%	99	34.0%	141	41.0%
	PT	230	67.3%	212	63.3%	178	66.2%	192	66.0%	203	59.0%
	Total	342	100.0%	335	100.0%	269	100.0%	291	100.0%	344	100.0%
AGE	**FT/PT**	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
		Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Under 18	FT	199	18.2%	216	21.5%	143	15.6%	135	20.1%	152	21.6%
	PT	894	81.8%	790	78.5%	773	84.4%	536	79.9%	552	78.4%
	Total	1,093	100.0%	1,006	100.0%	916	100.0%	671	100.0%	704	100.0%
18-19	FT	7,373	61.4%	6,789	61.9%	6,625	64.6%	7,256	65.6%	6,868	63.6%
	PT	4,633	38.6%	4,174	38.1%	3,624	35.4%	3,800	34.4%	3,937	36.4%
	Total	12,006	100.0%	10,963	100.0%	10,249	100.0%	11,056	100.0%	10,805	100.0%
20-21	FT	2,482	44.7%	2,618	47.3%	2,310	46.4%	2,270	47.0%	2,228	48.2%
	PT	3,071	55.3%	2,921	52.7%	2,673	53.6%	2,556	53.0%	2,394	51.8%
	Total	5,553	100.0%	5,539	100.0%	4,983	100.0%	4,826	100.0%	4,622	100.0%
22-24	FT	1,590	38.8%	1,679	40.5%	1,551	41.3%	1,570	41.6%	1,404	39.4%
	PT	2,508	61.2%	2,463	59.5%	2,200	58.7%	2,203	58.4%	2,157	60.6%
	Total	4,098	100.0%	4,142	100.0%	3,751	100.0%	3,773	100.0%	3,561	100.0%
25-29	FT	1,480	36.1%	1,602	36.9%	1,566	39.3%	1,562	40.5%	1,317	36.3%
	PT	2,619	63.9%	2,736	63.1%	2,414	60.7%	2,296	59.5%	2,315	63.7%
	Total	4,099	100.0%	4,338	100.0%	3,980	100.0%	3,858	100.0%	3,632	100.0%
30-34	FT	903	32.3%	1,007	32.8%	895	34.1%	818	33.4%	725	31.8%
	PT	1,889	67.7%	2,064	67.2%	1,733	65.9%	1,629	66.6%	1,558	68.2%
	Total	2,792	100.0%	3,071	100.0%	2,628	100.0%	2,447	100.0%	2,283	100.0%
35-39	FT	523	26.8%	645	30.7%	556	29.7%	535	31.3%	443	27.0%
	PT	1,432	73.2%	1,456	69.3%	1,314	70.3%	1,173	68.7%	1,196	73.0%
	Total	1,955	100.0%	2,101	100.0%	1,870	100.0%	1,708	100.0%	1,639	100.0%
40-49	FT	691	25.8%	790	26.9%	737	27.9%	659	29.0%	520	24.3%
	PT	1,986	74.2%	2,148	73.1%	1,908	72.1%	1,615	71.0%	1,622	75.7%
	Total	2,677	100.0%	2,938	100.0%	2,645	100.0%	2,274	100.0%	2,142	100.0%
50-64	FT	300	22.7%	456	27.9%	465	28.5%	332	25.0%	258	22.2%
	PT	1,022	77.3%	1,177	72.1%	1,168	71.5%	994	75.0%	902	77.8%
	Total	1,322	100.0%	1,633	100.0%	1,633	100.0%	1,326	100.0%	1,160	100.0%
65 and over	FT	13	9.0%	19	10.1%	19	10.2%	27	16.3%	14	8.6%
	PT	131	91.0%	170	89.9%	168	89.8%	139	83.7%	149	91.4%
	Total	144	100.0%	189	100.0%	187	100.0%	166	100.0%	163	100.0%
Age unknown/ unreported	PT	22	100.0%	34	100.0%	45	100.0%	38	100.0%	33	100.0%
	Total	22	100.0%	34	100.0%	45	100.0%	38	100.0%	33	100.0%

Continued

FALL FULL-TIME/PART-TIME STATUS OF STUDENTS WHO ATTEMPTED DEVELOPMENTAL EDUCATIONAL COURSES											
ETHNICITY	**FT/PT**	**2011-2012**		**2012-2013**		**2013-2014**		**2014-2015**		**2015-2016**	
		Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
American Indian	FT	982	48.4%	1,012	49.8%	837	46.5%	685	47.2%	667	43.2%
	PT	1,048	51.6%	1,019	50.2%	962	53.5%	766	52.8%	878	56.8%
	Total	2,030	100.0%	2,031	100.0%	1,799	100.0%	1,451	100.0%	1,545	100.0%
Asian	FT	366	32.4%	395	36.4%	368	34.5%	354	35.5%	361	37.5%
	PT	762	67.6%	689	63.6%	698	65.5%	644	64.5%	601	62.5%
	Total	1,128	100.0%	1,084	100.0%	1,066	100.0%	998	100.0%	962	100.0%
Black	FT	1,585	44.3%	1,663	46.2%	1,479	45.8%	1,295	46.8%	1,208	47.5%
	PT	1,991	55.7%	1,938	53.8%	1,752	54.2%	1,471	53.2%	1,333	52.5%
	Total	3,576	100.0%	3,601	100.0%	3,231	100.0%	2,766	100.0%	2,541	100.0%
Hispanic	FT	4,960	41.2%	4,895	41.9%	4,955	46.6%	5,408	48.9%	5,106	46.2%
	PT	7,086	58.8%	6,798	58.1%	5,683	53.4%	5,649	51.1%	5,957	53.8%
	Total	12,046	100.0%	11,693	100.0%	10,638	100.0%	11,057	100.0%	11,063	100.0%
Pacific Islander	FT	68	55.3%	66	49.3%	65	52.4%	72	62.6%	64	64.0%
	PT	55	44.7%	68	50.7%	59	47.6%	43	37.4%	36	36.0%
	Total	123	100.0%	134	100.0%	124	100.0%	115	100.0%	100	100.0%
International	FT	333	38.9%	386	43.9%	473	49.3%	555	60.9%	586	64.4%
	PT	523	61.1%	494	56.1%	487	50.7%	356	39.1%	324	35.6%
	Total	856	100.0%	880	100.0%	960	100.0%	911	100.0%	910	100.0%
Unknown	FT	1,161	42.6%	1,447	41.2%	1,418	40.5%	1,473	43.0%	1,262	40.6%
	PT	1,562	57.4%	2,063	58.8%	2,081	59.5%	1,954	57.0%	1,848	59.4%
	Total	2,723	100.0%	3,510	100.0%	3,499	100.0%	3,427	100.0%	3,110	100.0%
Two or More Races	FT	261	54.1%	298	55.1%	290	54.7%	343	55.1%	332	51.2%
	PT	221	45.9%	243	44.9%	240	45.3%	280	44.9%	317	48.8%
	Total	482	100.0%	541	100.0%	530	100.0%	623	100.0%	649	100.0%
White, Non-Hispanic	FT	5,838	45.6%	5,659	45.3%	4,982	45.1%	4,979	46.1%	4,343	44.0%
	PT	6,959	54.4%	6,821	54.7%	6,058	54.9%	5,816	53.9%	5,521	56.0%
	Total	12,797	100.0%	12,480	100.0%	11,040	100.0%	10,795	100.0%	9,864	100.0%

Notes:
Excluded institutions : Pima Community Collge (no dev ed data).
No dev ed data for Coconino Community College and Mohave Community College in 2011-2012

Dev Ed Student = cc_enrollment.term_attemptd_develop_hours > 0
FT = cc_enrollment.term_attemptd_hours >= 12 in Fall semester of year that student was dev ed
PT = cc_enrollment.term_attemptd_hours < 12 (and not 0) in Fall semester of year that student was dev ed

FOUR-YEAR AND SEVEN-YEAR AWARD COMPLETION OUTCOMES OF NEW-TO-HIGHER-ED STUDENTS, FALL 2010 AND FALL 2013

		Fall 2010						Fall 2013					
		Attempted Dev Ed		Not Dev Ed		Total		Attempted Dev Ed		Not Dev Ed		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ALL STUDENTS	Number in Cohort	15,394		23,108		38,502		14,942		22,099		37,041	
	Certificate in 4 years	525	3.4%	1,567	6.8%	2,092	5.4%	610	4.1%	1,887	8.5%	2,497	6.7%
	Associate degree in 4 years	1,322	8.6%	2,391	10.3%	3,713	9.6%	1,460	9.8%	2,991	13.5%	4,451	12.0%
	Transfer in 4 years	897	5.8%	3,756	16.3%	4,653	12.1%	990	6.6%	2,904	13.1%	3,894	10.5%
	Bachelor's degree in 4 years	72	0.5%	807	3.5%	879	2.3%	92	0.6%	659	3.0%	751	2.0%
	Certificate in 7 years	871	5.7%	2,006	8.7%	2,877	7.5%						
	Associate degree in 7 years	2,070	13.4%	3,319	14.4%	5,389	14.0%						
	Transfer in 7 years	1,619	10.5%	4,646	20.1%	6,265	16.3%						
	Bachelor's degree in 7 years	830	5.4%	2,459	10.6%	3,289	8.5%						
		Fall 2010						Fall 2013					
		Attempted Dev Ed		Not Dev Ed		Total		Attempted Dev Ed		Not Dev Ed		Total	
GENDER		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Female	Number in Cohort	8,338		11,146		19,484		7,888		10,722		18,610	
	Certificate in 4 years	246	3.0%	597	5.4%	843	4.3%	301	3.8%	747	7.0%	1,048	5.6%
	Associate degree in 4 years	801	9.6%	1,368	12.3%	2,169	11.1%	856	10.9%	1,773	16.5%	2,629	14.1%
	Transfer in 4 years	503	6.0%	2,094	18.8%	2,597	13.3%	543	6.9%	1,649	15.4%	2,192	11.8%
	Bachelor's degree in 4 years	52	0.6%	523	4.7%	575	3.0%	63	0.8%	440	4.1%	503	2.7%
	Certificate in 7 years	420	5.0%	815	7.3%	1,235	6.3%						
	Associate degree in 7 years	1,268	15.2%	1,882	16.9%	3,150	16.2%						
	Transfer in 7 years	910	10.9%	2,541	22.8%	3,451	17.7%						
	Bachelor's degree in 7 years	492	5.9%	1,405	12.6%	1,897	9.7%						
Male	Number in Cohort	6,960		11,774		18,734		6,996		11,205		18,201	
	Certificate in 4 years	277	4.0%	956	8.1%	1,233	6.6%	307	4.4%	1,119	10.0%	1,426	7.8%
	Associate degree in 4 years	510	7.3%	1,012	8.6%	1,522	8.1%	599	8.6%	1,202	10.7%	1,801	9.9%
	Transfer in 4 years	390	5.6%	1,648	14.0%	2,038	10.9%	443	6.3%	1,245	11.1%	1,688	9.3%
	Bachelor's degree in 4 years	20	0.3%	283	2.4%	303	1.6%	28	0.4%	216	1.9%	244	1.3%
	Certificate in 7 years	447	6.4%	1,172	10.0%	1,619	8.6%						
	Associate degree in 7 years	786	11.3%	1,420	12.1%	2,206	11.8%						
	Transfer in 7 years	700	10.1%	2,086	17.7%	2,786	14.9%						
	Bachelor's degree in 7 years	334	4.8%	1,045	8.9%	1,379	7.4%						
Not reported, Unknown	Number in Cohort	96		188		284		58		172		230	
	Certificate in 4 years	2	2.1%	14	7.4%	16	5.6%	2	3.4%	21	12.2%	23	10.0%
	Associate degree in 4 years	11	11.5%	11	5.9%	22	7.7%	5	8.6%	16	9.3%	21	9.1%
	Transfer in 4 years	4	4.2%	14	7.4%	18	6.3%	4	6.9%	10	5.8%	14	6.1%
	Bachelor's degree in 4 years	0	0.0%	1	0.5%	1	0.4%	1	1.7%	3	1.7%	4	1.7%
	Certificate in 7 years	4	4.2%	19	10.1%	23	8.1%						
	Associate degree in 7 years	16	16.7%	17	9.0%	33	11.6%						
	Transfer in 7 years	9	9.4%	19	10.1%	28	9.9%						
	Bachelor's degree in 7 years	4	4.2%	9	4.8%	13	4.6%						

Continued

FOUR-YEAR AND SEVEN-YEAR AWARD COMPLETION OUTCOMES OF NEW-TO-HIGHER-ED STUDENTS, FALL 2010 AND FALL 2013

		Fall 2010						Fall 2013					
		Attempted Dev Ed		Not Dev Ed		Total		Attempted Dev Ed		Not Dev Ed		Total	
AGE		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 18	Number in Cohort	285		569		854		219		677		896	
	Certificate in 4 years	15	5.3%	38	6.7%	53	6.2%	8	3.7%	51	7.5%	59	6.6%
	Associate degree in 4 years	28	9.8%	74	13.0%	102	11.9%	27	12.3%	109	16.1%	136	15.2%
	Transfer in 4 years	14	4.9%	124	21.8%	138	16.2%	29	13.2%	150	22.2%	179	20.0%
	Bachelor's degree in 4 years	0	0.0%	21	3.7%	21	2.5%	3	1.4%	16	2.4%	19	2.1%
	Certificate in 7 years	25	8.8%	54	9.5%	79	9.3%						
	Associate degree in 7 years	42	14.7%	105	18.5%	147	17.2%						
	Transfer in 7 years	30	10.5%	154	27.1%	184	21.5%						
	Bachelor's degree in 7 years	12	4.2%	82	14.4%	94	11.0%						
18-19	Number in Cohort	8,358		11,353		19,711		8,336		11,071		19,407	
	Certificate in 4 years	282	3.4%	467	4.1%	749	3.8%	338	4.1%	591	5.3%	929	4.8%
	Associate degree in 4 years	906	10.8%	1,875	16.5%	2,781	14.1%	1,075	12.9%	2,452	22.1%	3,527	18.2%
	Transfer in 4 years	672	8.0%	3,402	30.0%	4,074	20.7%	775	9.3%	2,550	23.0%	3,325	17.1%
	Bachelor's degree in 4 years	57	0.7%	754	6.6%	811	4.1%	75	0.9%	616	5.6%	691	3.6%
	Certificate in 7 years	502	6.0%	692	6.1%	1,194	6.1%						
	Associate degree in 7 years	1,368	16.4%	2,486	21.9%	3,854	19.6%						
	Transfer in 7 years	1,163	13.9%	4,090	36.0%	5,253	26.7%						
	Bachelor's degree in 7 years	610	7.3%	2,207	19.4%	2,817	14.3%						
20-21	Number in Cohort	1,779		2,096		3,875		1,773		2,101		3,874	
	Certificate in 4 years	48	2.7%	95	4.5%	143	3.7%	42	2.4%	157	7.5%	199	5.1%
	Associate degree in 4 years	77	4.3%	99	4.7%	176	4.5%	85	4.8%	119	5.7%	204	5.3%
	Transfer in 4 years	53	3.0%	89	4.2%	142	3.7%	50	2.8%	85	4.0%	135	3.5%
	Bachelor's degree in 4 years	2	0.1%	16	0.8%	18	0.5%	2	0.1%	8	0.4%	10	0.3%
	Certificate in 7 years	74	4.2%	129	6.2%	203	5.2%						
	Associate degree in 7 years	151	8.5%	150	7.2%	301	7.8%						
	Transfer in 7 years	118	6.6%	134	6.4%	252	6.5%						
	Bachelor's degree in 7 years	53	3.0%	70	3.3%	123	3.2%						
22-24	Number in Cohort	1,259		1,852		3,111		1,225		1,768		2,993	
	Certificate in 4 years	34	2.7%	164	8.9%	198	6.4%	43	3.5%	205	11.6%	248	8.3%
	Associate degree in 4 years	67	5.3%	83	4.5%	150	4.8%	57	4.7%	93	5.3%	150	5.0%
	Transfer in 4 years	52	4.1%	59	3.2%	111	3.6%	44	3.6%	42	2.4%	86	2.9%
	Bachelor's degree in 4 years	5	0.4%	6	0.3%	11	0.4%	3	0.2%	8	0.5%	11	0.4%
	Certificate in 7 years	59	4.7%	206	11.1%	265	8.5%						
	Associate degree in 7 years	115	9.1%	142	7.7%	257	8.3%						
	Transfer in 7 years	86	6.8%	106	5.7%	192	6.2%						
	Bachelor's degree in 7 years	48	3.8%	39	2.1%	87	2.8%						
25-29	Number in Cohort	1,321		2,155		3,476		1,242		1,787		3,029	
	Certificate in 4 years	54	4.1%	229	10.6%	283	8.1%	58	4.7%	262	14.7%	320	10.6%
	Associate degree in 4 years	83	6.3%	80	3.7%	163	4.7%	69	5.6%	83	4.6%	152	5.0%
	Transfer in 4 years	40	3.0%	36	1.7%	76	2.2%	38	3.1%	30	1.7%	68	2.2%
	Bachelor's degree in 4 years	3	0.2%	4	0.2%	7	0.2%	2	0.2%	3	0.2%	5	0.2%
	Certificate in 7 years	75	5.7%	263	12.2%	338	9.7%						
	Associate degree in 7 years	139	10.5%	143	6.6%	282	8.1%						
	Transfer in 7 years	85	6.4%	66	3.1%	151	4.3%						
	Bachelor's degree in 7 years	40	3.0%	20	0.9%	60	1.7%						
30-34	Number in Cohort	768		1,354		2,122		666		1,159		1,825	
	Certificate in 4 years	30	3.9%	148	10.9%	178	8.4%	39	5.9%	211	18.2%	250	13.7%
	Associate degree in 4 years	53	6.9%	52	3.8%	105	4.9%	42	6.3%	51	4.4%	93	5.1%
	Transfer in 4 years	25	3.3%	22	1.6%	47	2.2%	24	3.6%	16	1.4%	40	2.2%
	Bachelor's degree in 4 years	2	0.3%	3	0.2%	5	0.2%	4	0.6%	2	0.2%	6	0.3%
	Certificate in 7 years	44	5.7%	172	12.7%	216	10.2%						
	Associate degree in 7 years	89	11.6%	91	6.7%	180	8.5%						
	Transfer in 7 years	51	6.6%	39	2.9%	90	4.2%						
	Bachelor's degree in 7 years	26	3.4%	18	1.3%	44	2.1%						

Continued

FOUR-YEAR AND SEVEN-YEAR AWARD COMPLETION OUTCOMES OF NEW-TO-HIGHER-ED STUDENTS, FALL 2010 AND FALL 2013													
35-39	Number in Cohort	541		927		1,468		445		718		1,163	
	Certificate in 4 years	23	4.3%	119	12.8%	142	9.7%	23	5.2%	117	16.3%	140	12.0%
	Associate degree in 4 years	40	7.4%	42	4.5%	82	5.6%	24	5.4%	27	3.8%	51	4.4%
	Transfer in 4 years	15	2.8%	9	1.0%	24	1.6%	11	2.5%	11	1.5%	22	1.9%
	Bachelor's degree in 4 years	3	0.6%	1	0.1%	4	0.3%	0	0.0%	4	0.6%	4	0.3%
	Certificate in 7 years	35	6.5%	135	14.6%	170	11.6%						
	Associate degree in 7 years	60	11.1%	67	7.2%	127	8.7%						
	Transfer in 7 years	35	6.5%	24	2.6%	59	4.0%						
	Bachelor's degree in 7 years	18	3.3%	10	1.1%	28	1.9%						
40-49	Number in Cohort	715		1,532		2,247		667		1,326		1,993	
	Certificate in 4 years	23	3.2%	203	13.3%	226	10.1%	45	6.7%	178	13.4%	223	11.2%
	Associate degree in 4 years	47	6.6%	71	4.6%	118	5.3%	63	9.4%	37	2.8%	100	5.0%
	Transfer in 4 years	22	3.1%	13	0.8%	35	1.6%	12	1.8%	12	0.9%	24	1.2%
	Bachelor's degree in 4 years	0	0.0%	1	0.1%	1	0.0%	3	0.4%	2	0.2%	5	0.3%
	Certificate in 7 years	36	5.0%	236	15.4%	272	12.1%						
	Associate degree in 7 years	74	10.3%	104	6.8%	178	7.9%						
	Transfer in 7 years	37	5.2%	27	1.8%	64	2.8%						
	Bachelor's degree in 7 years	20	2.8%	11	0.7%	31	1.4%						
50-64	Number in Cohort	334		1,084		1,418		347		1,239		1,586	
	Certificate in 4 years	16	4.8%	101	9.3%	117	8.3%	14	4.0%	110	8.9%	124	7.8%
	Associate degree in 4 years	21	6.3%	15	1.4%	36	2.5%	18	5.2%	19	1.5%	37	2.3%
	Transfer in 4 years	4	1.2%	2	0.2%	6	0.4%	6	1.7%	8	0.6%	14	0.9%
	Bachelor's degree in 4 years	0	0.0%	1	0.1%	1	0.1%	0	0.0%	0	0.0%	0	0.0%
	Certificate in 7 years	21	6.3%	116	10.7%	137	9.7%						
	Associate degree in 7 years	32	9.6%	31	2.9%	63	4.4%						
	Transfer in 7 years	14	4.2%	6	0.6%	20	1.4%						
	Bachelor's degree in 7 years	3	0.9%	2	0.2%	5	0.4%						
65 and over	Number in Cohort	33		165		198		22		240		262	
	Certificate in 4 years	0	0.0%	3	1.8%	3	1.5%	0	0.0%	5	2.1%	5	1.9%
	Associate degree in 4 years	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Transfer in 4 years	0	0.0%	0	0.0%	0	0.0%	1	4.5%	0	0.0%	1	0.4%
	Bachelor's degree in 4 years	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Certificate in 7 years	0	0.0%	3	1.8%	3	1.5%						
	Associate degree in 7 years	0	0.0%	0	0.0%	0	0.0%						
	Transfer in 7 years	0	0.0%	0	0.0%	0	0.0%						
	Bachelor's degree in 7 years	0	0.0%	0	0.0%	0	0.0%						
Age unknown/unreported	Number in Cohort	1		21		22		0		13		13	
	Certificate in 4 years	0	0.0%	0	0.0%	0	0.0%	0	NA	0	0.0%	0	0.0%
	Associate degree in 4 years	0	0.0%	0	0.0%	0	0.0%	0	NA	1	7.7%	1	7.7%
	Transfer in 4 years	0	0.0%	0	0.0%	0	0.0%	0	NA	0	0.0%	0	0.0%
	Bachelor's degree in 4 years	0	0.0%	0	0.0%	0	0.0%	0	NA	0	0.0%	0	0.0%
	Certificate in 7 years	0	0.0%	0	0.0%	0	0.0%						
	Associate degree in 7 years	0	0.0%	0	0.0%	0	0.0%						
	Transfer in 7 years	0	0.0%	0	0.0%	0	0.0%						
	Bachelor's degree in 7 years	0	0.0%	0	0.0%	0	0.0%						

Continued

FOUR-YEAR AND SEVEN-YEAR AWARD COMPLETION OUTCOMES OF NEW-TO-HIGHER-ED STUDENTS, FALL 2010 AND FALL 2013

		Fall 2010						Fall 2013					
		Attempted Dev Ed		Not Dev Ed		Total		Attempted Dev Ed		Not Dev Ed		Total	
RACE/ ETHNIC-ITY		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
American Indian	Number in Cohort	811		611		1,422		753		526		1,279	
	Certificate in 4 years	14	1.7%	47	7.7%	61	4.3%	19	2.5%	57	10.8%	76	5.9%
	Associate degree in 4 years	54	6.7%	37	6.1%	91	6.4%	45	6.0%	47	8.9%	92	7.2%
	Transfer in 4 years	36	4.4%	53	8.7%	89	6.3%	32	4.2%	33	6.3%	65	5.1%
	Bachelor's degree in 4 years	2	0.2%	7	1.1%	9	0.6%	2	0.3%	9	1.7%	11	0.9%
	Certificate in 7 years	26	3.2%	61	10.0%	87	6.1%						
	Associate degree in 7 years	78	9.6%	59	9.7%	137	9.6%						
	Transfer in 7 years	68	8.4%	71	11.6%	139	9.8%						
	Bachelor's degree in 7 years	26	3.2%	24	3.9%	50	3.5%						
Asian	Number in Cohort	468		469		937		450		429		879	
	Certificate in 4 years	10	2.1%	22	4.7%	32	3.4%	11	2.4%	14	3.3%	25	2.8%
	Associate degree in 4 years	30	6.4%	72	15.4%	102	10.9%	48	10.7%	98	22.8%	146	16.6%
	Transfer in 4 years	53	11.3%	120	25.6%	173	18.5%	37	8.2%	108	25.2%	145	16.5%
	Bachelor's degree in 4 years	1	0.2%	23	4.9%	24	2.6%	2	0.4%	22	5.1%	24	2.7%
	Certificate in 7 years	15	3.2%	29	6.2%	44	4.7%						
	Associate degree in 7 years	66	14.1%	98	20.9%	164	17.5%						
	Transfer in 7 years	85	18.2%	146	31.1%	231	24.7%						
	Bachelor's degree in 7 years	46	9.8%	80	17.1%	126	13.4%						
Black	Number in Cohort	1,518		2,086		3,604		1,348		1,657		3,005	
	Certificate in 4 years	35	2.3%	82	3.9%	117	3.2%	25	1.9%	115	6.9%	140	4.7%
	Associate degree in 4 years	92	6.1%	101	4.8%	193	5.4%	90	6.7%	99	6.0%	189	6.3%
	Transfer in 4 years	45	3.0%	121	5.8%	166	4.6%	52	3.9%	77	4.6%	129	4.3%
	Bachelor's degree in 4 years	4	0.3%	18	0.9%	22	0.6%	0	0.0%	12	0.7%	12	0.4%
	Certificate in 7 years	56	3.7%	121	5.8%	177	4.9%						
	Associate degree in 7 years	145	9.6%	155	7.4%	300	8.3%						
	Transfer in 7 years	90	5.9%	155	7.4%	245	6.8%						
	Bachelor's degree in 7 years	36	2.4%	63	3.0%	99	2.7%						
Hispanic	Number in Cohort	4,700		4,613		9,313		5,205		5,478		10,683	
	Certificate in 4 years	181	3.9%	400	8.7%	581	6.2%	247	4.7%	539	9.8%	786	7.4%
	Associate degree in 4 years	383	8.1%	482	10.4%	865	9.3%	550	10.6%	862	15.7%	1,412	13.2%
	Transfer in 4 years	210	4.5%	570	12.4%	780	8.4%	327	6.3%	688	12.6%	1,015	9.5%
	Bachelor's degree in 4 years	15	0.3%	104	2.3%	119	1.3%	38	0.7%	129	2.4%	167	1.6%
	Certificate in 7 years	312	6.6%	505	10.9%	817	8.8%						
	Associate degree in 7 years	629	13.4%	704	15.3%	1,333	14.3%						
	Transfer in 7 years	453	9.6%	778	16.9%	1,231	13.2%						
	Bachelor's degree in 7 years	216	4.6%	398	8.6%	614	6.6%						
Pacific Islander	Number in Cohort	57		64		121		66		82		148	
	Certificate in 4 years	1	1.8%	4	6.3%	5	4.1%	2	3.0%	9	11.0%	11	7.4%
	Associate degree in 4 years	2	3.5%	5	7.8%	7	5.8%	5	7.6%	9	11.0%	14	9.5%
	Transfer in 4 years	4	7.0%	4	6.3%	8	6.6%	3	4.5%	5	6.1%	8	5.4%
	Bachelor's degree in 4 years	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Certificate in 7 years	2	3.5%	7	10.9%	9	7.4%						
	Associate degree in 7 years	5	8.8%	8	12.5%	13	10.7%						
	Transfer in 7 years	6	10.5%	8	12.5%	14	11.6%						
	Bachelor's degree in 7 years	2	3.5%	3	4.7%	5	4.1%						
Interna-tional	Number in Cohort	465		284		749		547		258		805	
	Certificate in 4 years	10	2.2%	15	5.3%	25	3.3%	26	4.8%	14	5.4%	40	5.0%
	Associate degree in 4 years	28	6.0%	40	14.1%	68	9.1%	54	9.9%	44	17.1%	98	12.2%
	Transfer in 4 years	22	4.7%	48	16.9%	70	9.3%	42	7.7%	34	13.2%	76	9.4%
	Bachelor's degree in 4 years	0	0.0%	14	4.9%	14	1.9%	6	1.1%	7	2.7%	13	1.6%
	Certificate in 7 years	15	3.2%	18	6.3%	33	4.4%						
	Associate degree in 7 years	38	8.2%	46	16.2%	84	11.2%						
	Transfer in 7 years	31	6.7%	57	20.1%	88	11.7%						
	Bachelor's degree in 7 years	23	4.9%	37	13.0%	60	8.0%						

Continued

FOUR-YEAR AND SEVEN-YEAR AWARD COMPLETION OUTCOMES OF NEW-TO-HIGHER-ED STUDENTS, FALL 2010 AND FALL 2013													
Unknown	Number in Cohort	1,369		3,414		4,783		1,701		3,945		5,646	
	Certificate in 4 years	36	2.6%	124	3.6%	160	3.3%	65	3.8%	225	5.7%	290	5.1%
	Associate degree in 4 years	96	7.0%	184	5.4%	280	5.9%	143	8.4%	373	9.5%	516	9.1%
	Transfer in 4 years	73	5.3%	1,325	38.8%	1,398	29.2%	88	5.2%	657	16.7%	745	13.2%
	Bachelor's degree in 4 years	5	0.4%	314	9.2%	319	6.7%	8	0.5%	201	5.1%	209	3.7%
	Certificate in 7 years	64	4.7%	173	5.1%	237	5.0%						
	Associate degree in 7 years	159	11.6%	267	7.8%	426	8.9%						
	Transfer in 7 years	128	9.3%	1,401	41.0%	1,529	32.0%						
	Bachelor's degree in 7 years	63	4.6%	642	18.8%	705	14.7%						
Two or More Races	Number in Cohort	193		324		517		278		486		764	
	Certificate in 4 years	4	2.1%	12	3.7%	16	3.1%	11	4.0%	39	8.0%	50	6.5%
	Associate degree in 4 years	22	11.4%	41	12.7%	63	12.2%	22	7.9%	70	14.4%	92	12.0%
	Transfer in 4 years	11	5.7%	52	16.0%	63	12.2%	18	6.5%	64	13.2%	82	10.7%
	Bachelor's degree in 4 years	0	0.0%	7	2.2%	7	1.4%	1	0.4%	11	2.3%	12	1.6%
	Certificate in 7 years	8	4.1%	21	6.5%	29	5.6%						
	Associate degree in 7 years	25	13.0%	49	15.1%	74	14.3%						
	Transfer in 7 years	22	11.4%	69	21.3%	91	17.6%						
	Bachelor's degree in 7 years	10	5.2%	41	12.7%	51	9.9%						
White, Non-Hispanic	Number in Cohort	5,813		11,243		17,056		4,594		9,238		13,832	
	Certificate in 4 years	234	4.0%	861	7.7%	1,095	6.4%	204	4.4%	875	9.5%	1,079	7.8%
	Associate degree in 4 years	615	10.6%	1,429	12.7%	2,044	12.0%	503	10.9%	1,389	15.0%	1,892	13.7%
	Transfer in 4 years	443	7.6%	1,463	13.0%	1,906	11.2%	391	8.5%	1,238	13.4%	1,629	11.8%
	Bachelor's degree in 4 years	45	0.8%	320	2.8%	365	2.1%	35	0.8%	268	2.9%	303	2.2%
	Certificate in 7 years	373	6.4%	1,071	9.5%	1,444	8.5%						
	Associate degree in 7 years	925	15.9%	1,933	17.2%	2,858	16.8%						
	Transfer in 7 years	736	12.7%	1,961	17.4%	2,697	15.8%						
	Bachelor's degree in 7 years	408	7.0%	1,171	10.4%	1,579	9.3%						

Notes:
Institutions Excluded in Fall 2010: Pima Community College, Arizona Western College, Mohave Community College, Coconino Community College - no dev ed data
Institutions Excluded in Fall 2013: Pima Community Colleg- no dev ed data
New-to-Higher-Ed Students = cc_new_to_higher_ed_cohort.first_cc_semester_attended equals 20105 or 20135
Certificate completion: received certificate from any public AZ community colleges within 4 years (by Summer 2014 for Fall 2010 and Summer 2017 for Fall 2013 cohorts) and within 7 years (by Summer 2017 for Fall 2010 cohort)
Associate degree completion: received associate degree from any public AZ community colleges within 4 years (by Summer 2014 for Fall 2010 and Summer 2017 for Fall 2013 cohorts) and within 7 years (by Summer 2017 for Fall 2010 cohort)
Transfer: enrolled in fall or spring semester at any public AZ universities within 4 years (by Spring 2014 for Fall 2010 and Spring 2017 for Fall 2013 cohorts) and within 7 years (by Spring 2017 for Fall 2010 cohort)
Bachelor's degree completion: received bachelor's degree from any public AZ universities within 4 years (Summer 2014 for Fall 2010 and Summer 2017 for Fall 2013 cohorts) and within 7 years (by Summer 2017 for Fall 2010 cohort) "

APPENDIX B - RESOURCES

National Organizations

National Organization for Student Success - NOSS (formerly NADE)
https://thenoss.org

National Center for Developmental Education - NCDE
https://ncde.appstate.edu/

College Reading and Learning Association - CRLA
https://www.crla.net/

Two-Year College English Association - TYCA
http://www2.ncte.org/groups/tyca/

American Mathematical Association of Two-Year Colleges - AMATYC
http://www.amatyc.org/

Achieving the Dream - AtD
http://achievingthedream.org/

Community College Resource Center - CCRC
https://ccrc.tc.columbia.edu/

Accelerated Learning Program - ALP
http://alp-deved.org/

The National Center for Academic Transformation - NCAT
http://thencat.org/

League for Innovation in the Community College
https://league.org/

American Association of Community Colleges (AACC)
https://www.aacc.nche.edu/

State Organizations

Arizona Association of Developmental Education - AADE
https://www.aade.info/

Arizona Mathematical Association of Two-Year Colleges - ArizMATYC
http://arizmatyc.org/wp/

Cradle to Career partnership - Pima County
http://www.c2cpima.org/

LaunchFlagstaff
http://launchflagstaff.org/

Thriving Together - Phoenix
http://launchflagstaff.org/

College and Career Readiness

Achieve
https://www.achieve.org/

American Institutes for Research
http://www.ccrscenter.org/

National College and Career Readiness Indicators
https://www.redefiningready.org


AMEPAC
Arizona Minority Education
Policy Analysis Center


PimaCommunityCollege